



# Submarine Export Cable Corridor Field Evaluations Report

Maryland Offshore Wind Project  
Delaware State Waters

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## **1.0 INTRODUCTION**

US Wind, Inc. (US Wind) proposes to construct the Maryland Offshore Wind Project (the Project) to be developed within the Bureau of Ocean Energy Management (BOEM) lease area OCS-A-0490 (Lease Area). The Project will be connected to the local electric grid by up to four Export Cables extending from the Lease Area to the Indian River Substation in Delaware. The Export Cables will transit the Lease Area independently, then merge into a single corridor and traverse federal and Delaware state waters of the Atlantic Ocean, making initial landfall at 3Rs Beach in Delaware Seashore State Park. From 3Rs Beach, the Export Cables will traverse Indian River Bay, making ultimate landfall at the Indian River Substation.

ESS Group, Inc. (ESS) completed a sediment sampling field investigation (the “Study”) to collect and analyze environmental sediment samples along the Export Cable Route Corridor in Delaware state waters, as illustrated in Figure 1. Sample analysis included both sediment bulk physical and chemical properties

ESS completed the sampling program in accordance with the *Sediment Sampling and Analysis Plan* (Appendix A), which was approved by the Delaware Natural Resources Environmental Conservation (DNREC) on July 12, 2016 with subsequent addenda to modify sampling locations and extend coverage, issued September 8, 2016 and July 12, 2017.

The following sections summarize the methods and findings of the vibracore sampling and analysis portion of the Study.

## **2.0 ENVIRONMENTAL SEDIMENT CORE SAMPLING PROGRAM**

The environmental sediment core sampling program was completed in two phases. The first phase, which included the Atlantic portion of the export cable route corridor in Delaware state waters, extended from September 10, 2016 to September 13, 2016. Six environmental vibracores were collected and processed during this phase of the program.

The second phase, which included Indian River Bay, began on October 6, 2017 and concluded on October 10, 2017. Sixteen environmental vibracores were collected and processed during this phase of the program.



Vessels used to collect vibracores include the R/V Shearwater (left) for Atlantic waters and R/V George (right) for Indian River Bay.

Alpine Ocean Seismic Survey (“Alpine”) was responsible for field operations, including positioning of the survey vessel as well as advancement and collection of vibracores. Details regarding horizontal and vertical control, survey vessel and crew, and equipment used is presented in Alpine’s *High Resolution Geophysical, Geotechnical, and Environmental Survey Reports* for the Atlantic and Indian River Bay portions of the export cable corridor.

ESS was responsible for directing field activities; splitting, logging, and sampling sediment cores; and coordinating activities with Alpine and the analytical laboratories. These activities will be the focus of this report.

### **3.0 RESULTS**

#### **3.1 Field Observations**

The interpreted results of ESS’s field observations are presented as core logs in Appendix B. This includes penetration and recovery values, Torvane field screening results (for cores with substantial cohesive sediment strata only), and physical descriptions of the sediment composition of each of the cores collected. Accompanying photographic logs of each core are presented in Appendix C.

#### **3.2 Physical Results**

A total of 36 sediment samples were collected from 22 vibracore locations and submitted to Alpha Analytical of Mansfield, Massachusetts for physical analysis. Samples were analyzed for the parameters listed in Table 1.

Physical laboratory analysis results are presented in Appendix D, with results also displayed in the observation core logs in Appendix B. Refer to Appendix E for physical laboratory analytical reports containing sample results, laboratory case narratives, laboratory QA/QC information including surrogate recoveries, internal laboratory control samples, laboratory control spikes, and analytical results for QA/QC samples submitted by ESS.

**Table 1. Bulk Physical and Chemical Analyses Completed**

Parameter	Method
Grain Size with Hydrometer	ASTM D422
Atterberg Limits	ASTM D4318
Specific Gravity	ASTM D854
Density of Soils/Solids	ASTM D7263
Total Organic Carbon and Black Carbon (TOC/BC)	Lloyd Kahn Method
Moisture, Ash, and Organic Matter	ASTM D2974
Total Metals [Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Ti, V and Zn]	EPA Method 6010C Hg by cold vapor Method 7471B
Polycyclic Aromatic Hydrocarbons (PAHs) and Alkyl PAH Homologs	EPA Method 8270D
Pesticides	EPA Method 8081A
PCB Congeners	EPA Method 1668C
Dioxins/Furans	EPA Method 1613B
Ammonia-Nitrogen	EPA Method 350.1
Phosphorus	EPA Method 365

### **3.3 Chemical Results**

A total of 36 sediment samples, plus quality assurance/quality control (QA/QC) samples, were collected at 22 different vibracore locations and submitted to Alpha Analytical of Mansfield, Massachusetts for chemical analysis. Samples were analyzed for the parameters listed in Table 1.

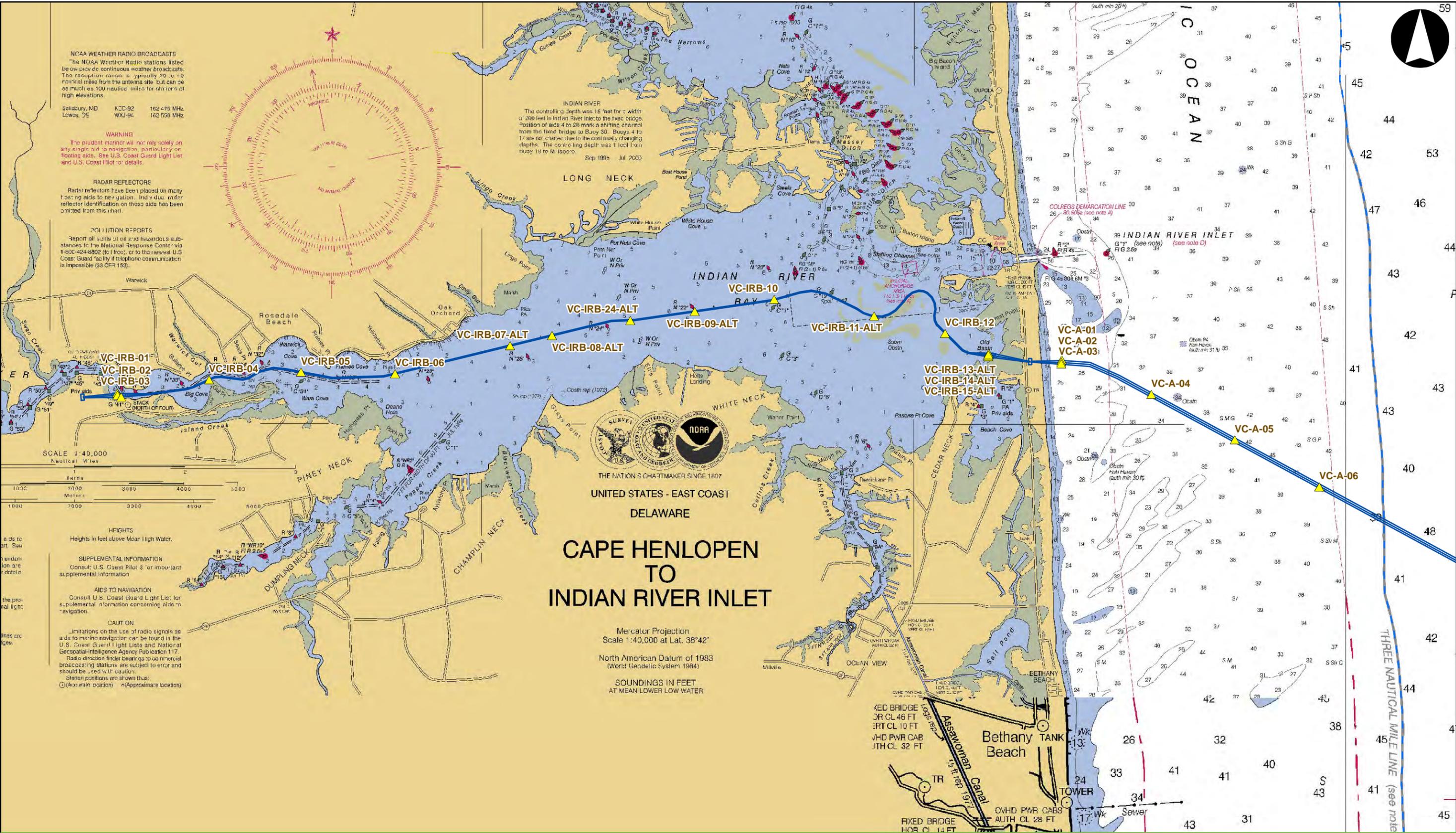
The sample analysis was performed to evaluate sediment disturbance from the proposed submarine cable installation methods.

Bulk chemical sample results are detailed in Appendix D, where they are compared to Delaware's most recent Ecological Sediment Marine screening levels under the DNREC Site Investigation & Restoration Section - Hazardous Substance Cleanup Act Screening Level Table. Refer to Appendix E for chemical laboratory analytical reports containing sample results, laboratory case narratives, laboratory QA/QC information including surrogate recoveries, internal laboratory control samples, laboratory control spikes, and analytical results for QA/QC samples submitted by ESS.

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**US Wind - Maryland Offshore Wind Energy Project**  
Indian River Bay and Delaware State Waters

Source: 1) NOAA, Raster Nautical Charts, 2016  
2) ESS Group, Vibracore Locations, September 2016 and October 2017

- ▲ Vibracore Sample Location
- Export Cable Route

Delaware Vibracore Sample Locations

Figure 1

## Appendix A

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# Sediment Sampling and Analysis Plan







# Environmental Sediment Sampling and Analysis Plan Delaware State Waters

## MARYLAND OFFSHORE WIND PROJECT

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Project No. U167-000

April 14, 2016





**ENVIRONMENTAL SEDIMENT SAMPLING AND ANALYSIS PLAN  
DELAWARE STATE WATERS  
Maryland Offshore Wind Project**

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Figure 1      Proposed Sediment Sampling Locations

### **APPENDIX**

Appendix A      Benthic Sampling Protocols



## **1.0 PROJECT DESCRIPTION**

US Wind, Inc. (USW) is proposing to construct a 750 MW offshore wind project, within the Maryland Wind Energy Area (WEA), located on the Outer Continental Shelf of the Atlantic Ocean, as designated by BOEM and leased to US Wind, offshore Ocean City, MD. The offshore wind turbines will be connected, via inter-array cabling, to an Offshore Transformer Module (OTM) located within the WEA. As part of the project, a new 230 kV export cable will connect the OTM to the Delmarva's Indian River 230 kV substation, located adjacent to NRG's Indian River Power Station near Millsboro, Delaware. The Project area is shown on Figure 1.

This sampling and analysis plan (SAP) was prepared to address Delaware Department of Natural Resources and Environmental Control (DNREC) requirements. The objective of the sediment sampling and analysis field program is to provide physical, chemical, and biological data along the proposed cable center line (Figure 1) to support environmental assessments required for environmental regulatory permitting. Specifically, sediment samples will be obtained using vibracore and gravity dredge sampling technologies and sediment will be analyzed for physical, chemical, and macroinvertebrate community analyses. Note that a Benthic Sampling Plan is included in Appendix A to specify sampling and analytical procedures for macroinvertebrate communities.

Two options being evaluated for cable installation are vertical injector/jet plow installation and horizontal directional drilling (HDD). If HDD is used, the Project may require a limited amount of dredging to support horizontal directional drilling operations and cable splicing. It is anticipated that dredged material will be disposed at an approved upland location in Delaware or sidecast and replaced, pending further discussions with DNREC. The construction contractor would confirm the disposal location with the state prior to the start of any dredging operations. Sediment sampling and analysis to support upland disposal is covered in this SAP.

## **2.0 PROJECT ORGANIZATION**

Alpine Ocean Seismic Survey, Inc. (Alpine) will conduct this field investigation work, with support from ESS Group, Inc. (ESS). Alpine will be responsible for field operations (i.e., advancing vibracores), establishing horizontal/vertical controls, and coordinating with the selected analytical laboratories during the field program. ESS will be responsible for overseeing field activities and providing support to the splitting, logging, and sampling of cores; as well as the collection of sediment grab samples and benthic biology analysis. Sediment samples will be analyzed by laboratories that are approved by DNREC for the particular analytical methods to be performed.

## **3.0 FIELD INVESTIGATIONS**

The field investigation will consist of collecting vibracores from sediment along the proposed cable corridor for field logging and laboratory analysis, in accordance with DNREC's "The Delaware Statewide Dredging Policy Framework," February 2001. Cores will be located at pre-selected locations along the proposed cable corridor and near the proposed landfalls in Delaware state waters (Figure 1).

Up to twenty-one (21) cores will be collected along the proposed cable corridor, from the Delaware state/Federal water boundary into Indian River Bay (Figure 1). The volume and location of cores was determined based on a review of existing information and sediment data specific to the proposed installation corridor. Sampling data from these locations should provide representative data for the entire survey corridor shown on Figure 1. No additional environmental vibracore sampling is planned as long as all disturbances due to jetting, excavation, dredging, and placement of temporary or permanent structures remain within the survey corridor.

Vibracore Target Penetration Depths – The target vibracore penetration depth will be approximately 10 feet below the present river bottom.

The sediment cores will be collected to the target penetration depth or until refusal is encountered. Refusal shall be defined as a penetration rate of less than one (1) foot in three (3) minutes. Should refusal occur prior to reaching the target depth, an attempt will be made to further advance the core by forcing high pressure water down the core barrel to a point about a foot above the previous refusal point. No more than two (2) cores will be collected at any location. Core locations will be named sequentially, as VC-01, VC-02 and VC-03, or in some sensible modification thereof.

Upon recovery, cores may be cut into shorter sections and capped at both ends by the subcontractor, for storage and transport. When sub-sampling the core, care will be taken not to include any sediment from this cut surface, or any plastic chips from the saw cut. Prior to cutting cores into more manageable sections, cores will be visually examined through the core liner to ensure that no core is cut in a manner that precludes individual horizons from being sampled separately.

The cores will be marked with identification information (i.e., core ID, date, top/bottom) using an indelible marker. If cores are cut into sections, the bottom section of a core will be designated as section “A” and section letters will increase up the core. Markings will be located on both end caps (to denote top and bottom) and midway along the core liner. If necessary, a piece of plastic sheeting or a plastic bag will be secured over the bottom cap of each section to protect the label. After labeling, the cores will be kept upright and cool until they are split, photo-logged, described, and sub-sampled at the core processing location.

### **3.1 Vibracore System and Survey Control**

Vibracores will be obtained from a vessel equipped with a vibracoring system capable of collecting standard 3.5-inch diameter cores up to 10 feet deep below the sediment-water interface. The Contractor will be responsible for locating the vibracores to within 10 feet of the target position, and will utilize the following survey and navigational controls:

- Horizontal survey control will be through Differential Global Positioning System DGPS, and will be referenced to Universal Transverse Mercator Zone 18N (NAD83 datum) in meters. Vertical data will be referenced to Mean Lower Low Water (MLLW).
- Seabed elevation will be established at all sampling locations at the time of vibracore advancement.
- Survey data will be archived in digital format.

### **3.2 Vibracore Field Notes**

Legible notes will be taken daily during vibracore operations on the vessel in dedicated field notebooks, using an indelible writing instrument, and will include the following information:

- Date/time
- Author of field notes
- Vessel name, captain, and daily port
- Daily objective
- Names and roles of all other personnel on the vessel (including visitors)
- Descriptions of the wind and sea conditions, noting changes throughout the day and weather limitations
- Descriptions of the tide and current, noting changes throughout the day and limitations
- Arrival/departure times from port and at locations

- Core identification number
- Core location recorded electronically via DGPS
- Water depth at core locations
- Penetration length
- Recovery length
- Problems encountered during the coring, including results of additional coring attempts required due to poor penetration or recovery and which core attempt was retained for sub-sampling
- Visual description of the core material recovered (i.e., sand, silt, organics, etc.), including description of the material observed at the bottom of the core/core cutting shoe
- Summaries of communications with others
- Additional notes provided by the Contractor, as applicable

Information in field books, logs and chains-of-custody should not be erased. Use single line cross-outs only and initial changes.

#### **4.0 CORE PROCESSING AND LOGGING**

Cores will be processed and logged either at a designated upland facility or on the coring vessel, depending on capacity. Details on core splitting, visual descriptions, and logging methodologies are presented in the following sections. Any deviation from these methodologies should be discussed with the Project Manager and noted accordingly in the field notes.

##### **4.1 Core Processing Area**

The core processing area will be under cover and protected from rain or water, be well-lit, have electric outlets and running water, and be of sufficient size to allow full lengths of at least one core to be laid out on the core processing surface. Sufficient storage must be available for unprocessed vibracores, coolers, boxes of sample jars, refrigerator(s), freezer, core processing tools, and other supplies. A broom, dust pan or shovel, and trash container are also necessary.

If an upland area is used, the processing area should be on the first floor of a building proximal to a garage-type doorway where the core delivery vehicle can back up to the space for unloading. Unprocessed cores will be stored vertically in refrigerators at temperatures of between 0 to 4 degrees C (32 to 39 degrees F). DOT-approved 55-gallon open-top drums should be available for disposal of excess sediments (see Section 5.10). A solid waste dumpster is also necessary on site for disposal of core liners (with sediment removed) and other solid waste generated during core processing.

##### **4.2 Splitting of Cores**

Each core will be split at the core processing facility and the previously labeled caps will be saved for photo logging purposes. Disposable nitrile gloves shall be worn at all times when handling samples. Gloves will be changed and properly disposed of as necessary to prevent cross contamination of separate laboratory samples. At a minimum, gloves shall be changed between each sampling location.

The lexan core liner will be cut lengthwise, on two opposing sides, with decontaminated power shears. Clean stainless steel wire will be used to separate the core lengthwise into two half-cylinders, so that the center of the core is visible.

#### **4.3 Photo Logging of Cores**

The core will be photo logged. Photo logging will proceed as follows:

- A tape measure (divided into 0.10-foot units) will be placed next to the core for reference. The tape measure will be positioned so that the zero mark is located at the top of the core (i.e., the sediment-water interface) and oriented so it appears at the left side of the photographs.
- During photo logging, the core and the tape measure will not be moved. This will provide consistency in core measurements.
- The end caps from the core will be used as markers for the photo logging and will appear in each photograph of the core material.
- Each core photo will be taken in a uniform manner, with the two caps at the top of the photo and lined up with the upper and lower foot mark. The two halves of the core will be positioned at the bottom of the photo and the tape measure will be located between the two core halves. The photos will be taken for each foot of sediment as shown below:



#### **4.4 Visual Examination of Cores and Core Logging**

Each core will be visually examined and logged using a standard vibracore field logging sheet. The following information will be included on each core log:

1. Project number, site, and client/project name.
2. Core identification and collection date.
3. Field personnel on boat during coring.
4. Date/time of core logging/sub-sampling.

5. Core logging/sampling personnel (*ex situ*).
6. Depth of water during collection.
7. Core penetration length (to the nearest 0.1 foot).
8. Core recovery length (to the nearest 0.1 foot).
9. Unified Soils Classification System (USCS) classification.
10. Distinct changes in stratigraphy, including color, grain sizes, density, and organic material. Percent composition of materials within each core will be estimated, and noted as well.
11. The presence and size of larger gravels and clasts, and foreign man-made material such as metal, brick, etc. Photographs will be taken of any man-made materials.
12. Materials that may have been cut by the vibracore (i.e., cobbles, stones, etc.). Fresh fractured surfaces may be evidence of such vibracore cutting.
13. Any indications of contamination, including odors and visual staining.

#### **4.5 Field Analysis of Cores**

The shear strength of cohesive sediments will be measured in the field using a hand-held Torvane. The Torvane will be capable of measuring a stress range from zero to 2.5 kilograms per square centimeter (kg/cm<sup>2</sup>). For each cohesive stratum measuring at least two (2) feet in thickness, Torvane readings will be taken every two (2) feet beginning near the top of the stratum, with a minimum of two (2) measurements per stratum. To avoid cross contamination, sediment used for Torvane field testing will not be used for chemical sample analysis. One half of the core will be used for Torvane and physical sample collection and the other half for chemical analysis.

#### **5.0 SEDIMENT SAMPLING AND LABORATORY ANALYSIS**

Sediment sampling, handling, storage/preservation, and analysis will be consistent with accepted industry standard field and laboratory procedures and pursuant to “The Delaware Statewide Dredging Policy Framework” (February 2001). Visual assessments of cores will be completed as detailed above in Section 4.4. Following visual assessment and logging, each core will be sub-sampled for physical and chemical characteristics depending on sediment type and stratification observed in the cores.

If no stratification is observed throughout the length of a core, one (1) homogenized sample of the core will be selected for laboratory analysis. If the grain size, total organic carbon and black carbon (TOC/BC), or likelihood of contamination based on core lithology or known contamination history indicates that individual horizons within the core may be significantly different in sediment quality, each distinct stratum with a depth of two (2) feet or greater will be sampled separately.

If a core sample is observed to be comprised of greater than 90 percent sand and gravel, chemical laboratory analyses will not be performed, *provided the core was not collected from an area of known present or historical contamination*. Visual observations used to make the determination that a sample is greater than 90 percent sand and gravel will be documented by a laboratory grain size analysis. Samples from these locations will be collected and held at the laboratory for chemical analysis pending the results of the laboratory grain size analysis.

For cores collected from cofferdam/dredge landfall locations, the bottom one foot of the core will be sampled separately for chemical analysis. This sample will represent the sediment to be exposed after dredging activities.



### **5.1 Physical Analysis**

Each sample will be analyzed for the following physical parameters:

- Grain size with hydrometer (ASTM D 422)
- Moisture, Ash and Organic Matter (ASTM D 2974)
- Atterberg Limits (ASTM D 4318)
- Specific Gravity of Solids (ASTM D 854)
- Density of Soils/Solids (ASTM D7263)

### **5.2 Chemical Analysis**

Each homogenized sample will be analyzed for the parameters identified in Chapter II (Environmental Evaluation) of The Delaware Statewide Dredging Policy Framework by USEPA SW-846 test methods, listed below. The specific analyte lists and detection limits will be consistent with The Delaware Statewide Dredging Policy Framework. Additional sample volumes may be collected from each sample location and frozen for archive purposes.

- Pesticides, USEPA Method 8081A
- Total Metals, USEPA Methods 6010C, Hg cold vapor 7471B
- Dioxins, USEPA Method 1613B
- Total Organic Carbon and Black Carbon (TOC/BC), Lloyd Kahn method
- PCB Congeners, USEPA Method (680/8270)
- Parent PAH and Alkyl PAH Homologs, USEPA Method 8270D
- Ammonia-Nitrogen, USEPA Method 350.1
- Total Phosphorus, USEPA Method 365

### **5.3 Sample Containers**

Appropriate pre-cleaned and unused sample containers will be provided by the laboratory(ies). Container quality will be visually checked prior to placing sediments into containers.

### **5.4 Sample Labeling**

Laboratory-supplied pre-printed sample labels will be used to appropriately identify sample containers, and will be placed on the containers prior to filling with sediment. Samples collected during the field investigation will be labeled with a sample identification code. Sample labels will reference both the vibracore identification number (VC01, VC02, and so on) and sample number (i.e., VC01-S1, VC01-S2, VC01-S3, and so on). The following information will be recorded on each sample label, and sample labels will be checked twice to ensure accuracy and consistency with field records:

- Company name
- Project number
- Project/site name
- Sample identification code
- Analyses to be performed

- Preservation method
- Date/time of sampling from the core
- Initials of person collecting the sample
- Pertinent comments, if applicable

### **5.5 Sample Collection and Handling**

Any water which separates from the raw sediment sample during transport/storage (i.e., pore water) will be re-mixed with the solid components of the sediments prior to forming the composite samples. This pore water will not be decanted from the sediment sample.

Sampling will be limited to the interior of the split core. Sediment adjacent to core cross-cuts or sediment adjacent to the liner walls that was disturbed by the lengthwise cutting process will not be sampled. Collection of plastic chips or shards that may be present as a result of the cutting process will be avoided.

Samples will be homogenized prior to placement in sampling containers to ensure that representative samples are obtained. Homogenization will proceed by mixing the sample in a clean stainless steel bowl with a clean stainless steel spoon until the sample is visibly uniform in color and consistency. Only sampling equipment designed for environmental sampling will be used. Any water that has separated from the sediment will be mixed back into the sample. For chemical samples, material larger than one-quarter inch will be removed and noted, including twigs, leaves, shells, and gravel. For physical samples, all materials will be maintained in the sample unless it is too large for the sample container or misrepresents the sample (i.e., a composite would not statistically contain this piece of material). Materials that are too large or unrepresentative will be documented.

Homogenized sediment will be transferred into the appropriate clean containers using a stainless steel spoon and the containers closed securely. Care will be taken to prevent sediment from collecting on the exterior of sample containers. Sediment that accumulates on the container exterior and top, including jar threads, will be wiped off with a clean paper towel prior to securing the lid.

If chemical samples are to be frozen by the laboratory to suspend holding times, the jars will only be filled two-thirds to allow room for expansion of wet sediments and prevent container breakage.

Chemical sample containers will be placed in laboratory-supplied bubble-wrap bags and into an ice-packed cooler or refrigerator immediately after sampling. Large, heavy-duty zip-loc bags will be used to contain ice within coolers, which will prevent water from seeping into sample containers, damaging sample container labels and/or leaking from coolers during transport. Physical sample containers will be placed in coolers or other appropriate shipping containers, without ice.

### **5.6 Sample Tracking and Chain of Custody**

The samples submitted for laboratory analysis will be preserved, stored, handled, and transmitted to the laboratory within allowable hold times. Laboratory-supplied chain-of-custody forms will be used to track sample custody for both physical and chemical samples. The chain-of-custody forms will be completed immediately after each sample is processed to minimize potential for errors. Chain-of-custody forms will be double-checked prior to releasing the samples, and laboratory personnel advised on the proper signature, date, and time of release information required. Chain of custody forms will include all information required by the laboratory including the following, at a minimum:

- Project name
- Project number

- Sample identification (e.g. Station location number)
- Company name
- Date (e.g. date = YYMMDD)
- Time (e.g. 4-digit, 24-hour)
- Sample matrix indicating type of sample (composite or grab)
- Initials of personnel performing the sampling
- Analyses to be performed and required method reporting limits
- Preservation technique
- Container type
- Number of containers for each sample
- Pertinent comments or special requests (e.g., archive, hold, freeze)
- Release signature with date and time

The samples will be delivered to the appropriate laboratories via overnight priority shipping or courier so that hold times and temperature preservation requirements are met. If shipped overnight, the chains of custody will be placed in plastic bags and taped inside the cooler lid. Additionally, custody seals will be properly secured over the lid of each cooler (i.e., double-wrapped with filament tape). If transported via courier, chain of custody forms must be signed by the courier with the date and time of release and do not need to be secured inside the coolers.

### **5.7 Sampling Equipment Decontamination Procedures**

Every effort will be made to avoid cross-contamination of samples. Proper methods will be followed, including using dedicating sample equipment whenever possible. When equipment is to be reused, such as the re-use of plastic or stainless-steel spoons, trowels, or bowls, the following decontamination procedure will be followed before use with each new sample:

1. Distilled/deionized Water and Non-phosphate Detergent Rinse/Scrub – A non-phosphate laboratory-grade detergent will be added to distilled or deionized water and mixed in spray bottles per manufacturer's recommendations. The water/detergent solution will be sprayed onto equipment in quantities sufficient to promote formation of bubbles/foam when scrubbed with a scrub brush. Scrubbing shall continue until the absence of soil, sediment and foreign material on the equipment is confirmed visually.
2. Distilled/deionized Water Rinse – Distilled or deionized water will be either poured or sprayed over the equipment following the tap water/detergent rinse/scrub. The water rinse shall continue until the bubbles/foam generated from the water/detergent rinse/scrub has been purged from the equipment.
3. Isopropyl Alcohol Rinse – Following the water rinse, pesticide-grade isopropyl alcohol will be sprayed onto the equipment in sufficient quantities to coat the entire surface area of the equipment.
4. Distilled/deionized Water [Triple] Rinse – Following the isopropyl alcohol rinse, distilled or de-ionized water will be sprayed onto the equipment no fewer than three (3) times to coat the entire surface of the equipment.
5. Dry – Equipment shall be dried with clean paper towels or allowed to air dry (preferred, if time allows).

6. Storage – Once dry, to prevent contamination in between uses, items will be wrapped with dedicated sheets of tin foil and/or zip-lock plastic bags, or stored in an area not subject to cross-contamination from windblown sediment and/or water.

To keep transport to a minimum and prevent cross-contamination, the decontamination activities should occur in a designated area that is separate from, but in close proximity to, the sample handling location. Decontaminated sampling equipment will be stored in a location and manner that prevents cross-contamination. Storage and working areas, including the coolers, will be cleaned regularly.

### **5.8 Quality Assurance/Quality Control Program**

The goal of this SAP is to provide sediment data which are accurate, representative, and legally defensible. The following Quality Assurance/Quality Control (QA/QC) measures in sampling sediments will include: use of proper containers and appropriate methods of sample collection and preservation; providing strict sample identification and chain-of-custody documentation; and decontamination and cross-contamination prevention procedures.

The guidance described in Appendix B, Section II of the New Jersey Dredging Technical Manual will be followed for this project and communicated to the analytical laboratories.

### **5.9 Archived Sediments**

Any additional sample aliquots or extra sediments remaining in sample containers following the requested analyses will be frozen/archived by the analytical laboratory for one year.

### **5.10 Excess Sediment Management**

If an upland location is utilized for core processing/sampling, excess sediment remaining after sample collection will be transferred to DOT-approved 55-gallon open-top drums for temporary storage at the sample processing location. This sediment will be properly managed based on its chemical disposition.

## **6.0 NOTIFICATIONS**

### **U.S. Coast Guard**

A “Coast Guard Sector Delaware Bay Request for Marine Activity Approval” form shall be completed and filed with US Coast Guard Sector Delaware Bay Waterways Management at least 10 business days prior to the start of field operations. This form is required to be submitted when sampling operations will occur:

- Within any charted or Federal Channel;

The completed form (version 14 May 2012) is filed with Mr. Tom Simpkins via email to [Tom.J.Simpkins@uscg.mil](mailto:Tom.J.Simpkins@uscg.mil) . Review and approval will generally take a minimum of 5 business days. Authorization to proceed will not be given until five (5) days after Coast Guard approval is granted. This timeline also applies to any revisions to an approved project.

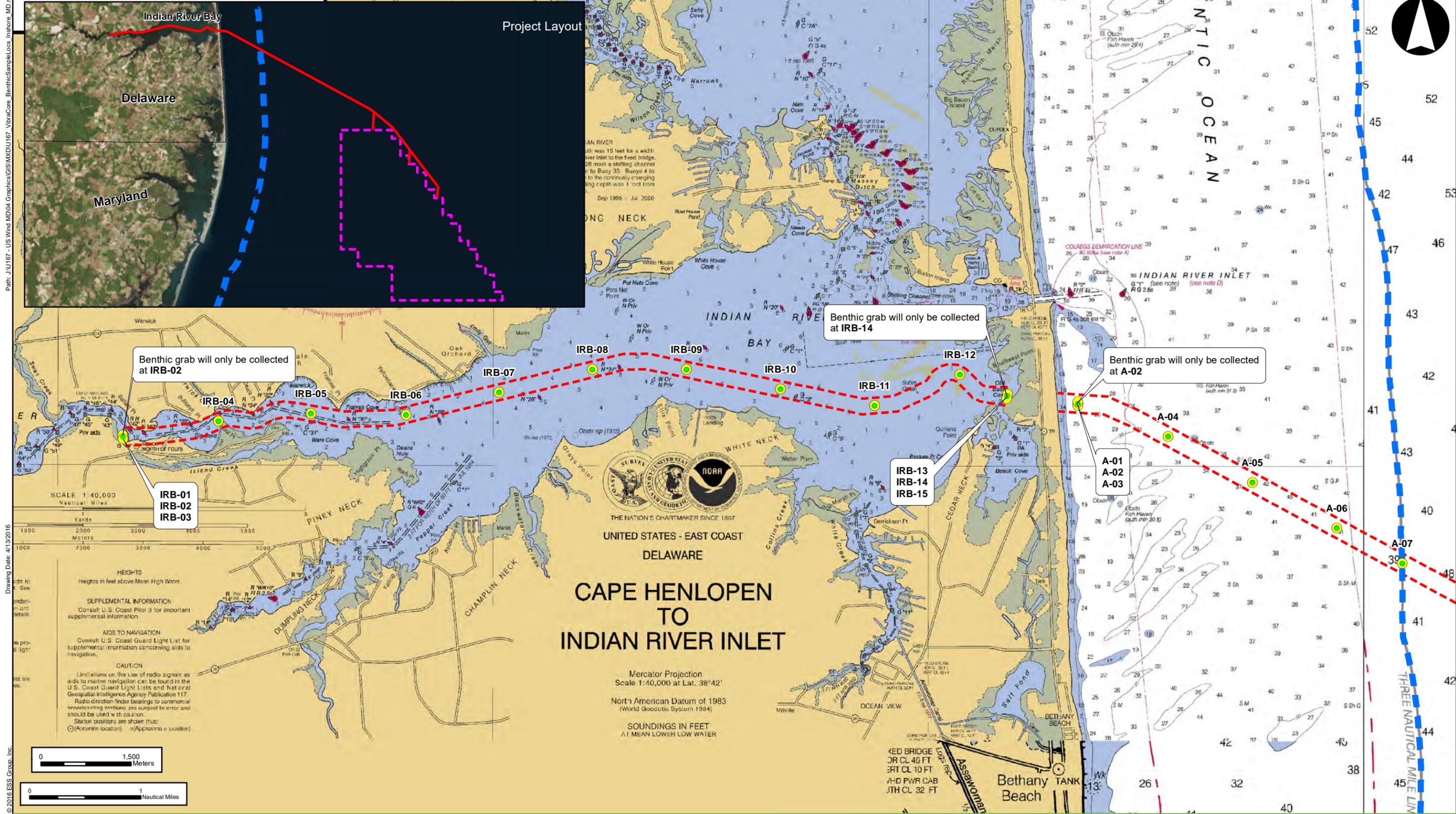
Requests for Notice to Mariners for sampling operations outside of the areas listed above must be faxed to 617.223.8073 or emailed to [LNM@uscg.mil](mailto:LNM@uscg.mil) by Tuesday for Thursday publication.

### **U.S. Army Corps of Engineers**

This plan will be submitted to the U.S. Army Corps of Engineers, Philadelphia District, as part of the Nationwide Permit survey notification requirement.

## Figures

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**US Wind, Inc. - Maryland Offshore Wind Project**

Indian River Bay and Atlantic Ocean, Delaware

1 inch = 1 nautical miles    1 inch = 1,500 meters

- Source: 1) ESS, Export Cable Route, 2016  
2) BOEM, Wind Planning Areas, 2013  
3) NOAA, DNC, 2016

\*Proposed sampling locations are approximate and subject to change based on geophysical survey results.

**Legend**

- Benthic Sampling Location\*
- Vibracore Sampling Location\*
- State/Federal Water Boundary
- Geophysical Survey Corridor
- MD Lease Area

**Benthic and Vibracore Sampling Locations**

Figure 1

## Appendix A Benthic Sampling Protocol

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# Benthic Sampling Protocol

## Maryland Offshore Wind Project

**PREPARED FOR:**

US Wind, Inc.  
1 North Charles Street, Suite 2310  
Baltimore, Maryland 21210

**PREPARED BY:**

ESS Group, Inc.  
100 Fifth Avenue, 5th Floor  
Waltham, Massachusetts 02451

Project No. U167-000

April 12, 2016







**BENTHIC SAMPLING PROTOCOL  
Maryland Offshore Wind Project**

*Prepared For:*

**US Wind, Inc.**

1 North Charles Street, Suite 2310  
Baltimore, Maryland 21210

*Prepared By:*

**ESS Group, Inc.**

100 Fifth Avenue, 5<sup>th</sup> Floor  
Waltham, Massachusetts 02451

**Project No. U167-000**

**April 12, 2016**



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### **FIGURES**

Figure 1      Proposed Benthic Sampling Locations along Survey Corridor



## **1.0 INTRODUCTION**

US Wind, Inc. (USW) is proposing to construct a 750 MW offshore wind project within the Maryland Wind Energy Area (WEA), located on the Outer Continental Shelf of the Atlantic Ocean, as designated by BOEM and leased to US Wind, offshore Ocean City, MD. The offshore wind turbines will be connected via inter-array cabling, to an Offshore Transformer Module (OTM) located within the WEA. As part of the project, a new 230 kV export cable will connect the OTM to the Delmarva's Indian River 230 kV substation, located adjacent to NRG's Indian River Power Station near Millsboro, Delaware. The Project Area and survey corridors are shown on Figure 1.

The objective of the benthic habitat assessment field program is to collect environmental data at locations within the planned survey corridor (Figure 1) to support the Project's regulatory permitting efforts. Specifically, this will include collection and analysis of benthic samples using a gravity dredge. The benthic samples will be used to conduct an assessment of the macroinvertebrate community in the survey corridor. Benthic grab sampling will be supplemented by collection of benthic surface imagery using a shallow-water camera system.

In preparation for the state and federal permit requirements this Benthic Sampling Protocol has been prepared to meet the specific needs of the US Wind Project for characterizing the macroinvertebrate community in Indian River Bay as well as Delaware and federal waters of the Atlantic Ocean.

## **2.0 PROJECT ORGANIZATION**

ESS and the selected marine survey contractor personnel will conduct this field investigation work. The marine survey contractor will be responsible for field operations (e.g., survey vessel and dredge sampler operation) and establishing horizontal/vertical control. ESS will be responsible for observing field activities, sieving and preserving benthic samples, and coordinating activities with the marine contractor.

ESS will also provide benthic macroinvertebrate laboratory services. This includes sample logging and sorting, identification and enumeration of benthic macroinvertebrates from each sample. ESS will use the data from this survey to complete a benthic macroinvertebrate community assessment, detailing the results of the benthic sampling field program.

## **3.0 BENTHIC SAMPLING AND ANALYSIS**

The following guidelines are to be used for quantitative benthic macroinvertebrate sample collection and analysis. Sampling will be conducted using a gravity dredge deployed from the vessel. Grab sampling will be supplemented by collection of benthic surface imagery using a shallow-water camera system. The laboratory analysis procedures are specific with respect to critical techniques and quality assurance and quality control procedures.

### **3.1 Macroinvertebrate Collection Protocols**

#### **3.1.1 Equipment and Materials**

The following field equipment and materials may be necessary for this procedure:

- Gravity dredge (Day Grab or other similar dredge) and cable – typically supplied by marine survey contractor
- 10% neutral buffered formalin
- Plastic sample jars (quart size or larger) – a minimum of one per sample necessary
- Field notebook or field datasheets and pen
- Pre-printed labels and markers for sample jars
- Large plastic tubs (at least two)
- Large durable spoon or scoop
- Nitrile gloves
- Measuring stick or tape measure
- 0.5-millimeter sieve bucket
- Five-gallon buckets (optional)
- 1/4-inch box sieve (optional)
- Wash bottle or similar device (optional)
- Forceps (optional)

#### **3.1.2 Collection Methods**

The following details assume that macroinvertebrate collection work will be conducted from a coring vessel or other similar research vessel. The proposed benthic sampling locations are shown in Figure 1. Benthic sampling data from these locations should provide representative data for the survey corridor shown.

##### **Detailed Procedures**

1. Prior to collecting the first sample, document the type of grab sampler to be used. This should include, at a minimum, photographs of the sampler in the open and closed positions, as well as a measurement of the sampling area dimensions.
2. ***Collect benthic macroinvertebrate samples before initiation of coring or other bottom-disturbing activity.*** This is necessary to minimize prior disturbance to the sampled benthic community.
3. Prepare the gravity dredge for deployment. Prior to lowering dredge, ensure that jaws or bucket are in the ready, or safety, position. Check that all flaps and screens are in the appropriate position for minimizing shockwaves and loss of material upon retrieval. Ensure that the marine survey contractor lowers the gravity dredge at a moderate and consistent speed (i.e., the dredge should not be allowed to freefall or

- start and stop repeatedly) and that the dredge is vertically aligned (i.e., not strongly angled to one side). The objective is to have the dredge enter the seafloor material orthogonally and penetrate deeply enough that a representative, undisturbed sample of the top layer of sediment is collected. Once on the bottom, the rope or cable holding the grab sampler will go slack and the sampler jaws will trigger.
4. Upon retrieval to the vessel, set the dredge directly in a plastic tub or on a sampling table with a plastic tub secured in an appropriate location for collecting sample material once the dredge has been opened.
  5. Remove or pull back the screens and/or flaps covering the top of the sampler. Examine the contents of the sampler to make sure that an acceptable sample has been collected. ***Acceptable samples are those with recovery of at least three inches of material that do not show signs of washout or uneven penetration. Samples that show signs of over penetration (e.g., sample material oozing through top screen or flap) are not desirable.***
  6. If the sample ***does not*** meet acceptability criteria, the collected material should be temporarily retained in a plastic tub, bucket or other container on board. Resampling at an offset location of at least one meter from the initial location will be required to collect a more representative sample. If modifications such as adding or removing weights would be likely to result in collection of a more representative sample, make those modifications prior to deploying the gravity dredge again. If, after two attempts, an acceptable sample has not been collected, the *most representative* sample of the two samples should be retained for return to the laboratory. The other sample may be discarded. *Note: this guideline does not apply if the dredge sampler simply failed to trigger or jamming of the jaws/bucket resulted in sample washout. In these situations, the dredge sampler should be redeployed until sediment has successfully been collected.*
  7. Record sample details in field log. These include water depth, sediment type, sample recovery, and whether sample was accepted or rejected. Record any other pertinent information and ensure that DGPS coordinates have been electronically logged by the responsible party onboard.
  8. If the material collected by the dredge sampler is less than three inches thick, transfer the entire sample (benthic organisms and all collected sediment) into a 0.5-millimeter sieve bucket for onboard sieving. If the sample material is more than three inches thick, scoop out the top three inches and place in a 0.5-millimeter sieve bucket for onboard sieving. Note and photograph any large or unusual organisms (e.g., shellfish or deep-burrowing polychaetes) in the remaining deeper sediments. A coarse (1/4-inch) mesh sieve may optionally be placed under the sample to retain large burrowing organisms. Sample residue from deep sediments can be discarded after these organisms have been documented.
  9. Gently rinse the retained sample material in the 0.5-millimeter sieve bucket with pumped water (if available) or in a tub full of water. Take care not to damage organisms in the sample through rough handling or directing strong water flow into

- the sample material. Rinse until fines are no longer observed passing through the sieve.
10. Carefully transfer the sample from the sieve bucket to a sample jar. Use a spoon, forceps, or a wash bottle to dislodge any coarse material or organisms that remain attached to the sieve or bucket interior.
  11. Add enough neutral buffered formalin solution to bring the sample ratio to 90% sample/seawater and 10% preservative. Make sure that the buffered formalin solution is mixed well within the sample by gently swirling (**do not shake**) the material in the sample jar. If proper preservation is not possible in the field, the samples may be preserved on in a refrigerator or on ice for up to 24 hours, at which time they must be preserved.
  12. Label the sample inside and out. Use permanent marker to label the exterior of the sample jar. **Internal paper labels are also required** as a failsafe identification method should the external label be washed or worn off. Each label should include project name, site identification code, date of sample collection, initials of sample collector, preservative, and number of jars used (if needed—e.g. 1 of 3, 2 of 3, etc.).
  13. Rinse sieves between samples by backwashing with clean surface water. It is important to rinse thoroughly to avoid cross-contamination of samples.
  14. Return preserved samples to ESS's East Providence office for laboratory analysis.

## **3.2 Laboratory Analysis Protocols**

### **3.2.1 Equipment and Materials**

The following laboratory equipment and materials may be necessary for this procedure:

- Laboratory log-in sheet
- Bench sheets
- 75% ethanol for long-term preservation
- Disposable plastic pipettes
- Sieve with screen mesh size of 0.5 millimeters or less
- Funnel and plastic waste container
- Sorting pans (Petri dishes)
- Forceps – fine gauge for sorting and ultrafine gauge for identification
- Assortment of appropriately sized sample vials
- Whirl-pak bags
- Dissecting microscope
- Compound microscope

- Slide mounting supplies (slides, cover slips, and CMC-9 or CMC-10 mounting medium)
- Fiber-optic gooseneck lamps
- Invertebrate taxonomic keys
- Rose Bengal (dye) solution (optional)

### **3.2.2 Laboratory Analysis Methods**

The following details assume that macroinvertebrate identification will be conducted by qualified staff in an offsite laboratory.

#### **Detailed Sorting Procedures**

1. Samples should be logged-in on arrival at the lab and checked for adequate preservation. If additional preservative is necessary for sample storage, it should be added at this time.
2. Prior to sorting, empty the sample jar contents into a 0.5-millimeter sieve and gently rinse with tap water to remove preservative and fines. Rinseate should be temporarily captured in a tub of sufficient volume. Once each sample has been adequately rinsed, transfer the rinseate into an appropriately labeled waste container. Use a funnel, if needed, to assist with transfer of the rinseate.
3. In order to facilitate the sorting procedure, a small amount (usually one or two drops) of Rose Bengal stain and ethanol solution may be added to each sieved sample using a plastic pipette. This will stain soft tissues pink and greatly enhance sorting efficiency in samples that consist primarily of sand.
4. Once the sample has been rinsed, float the remaining material by immersing the sieve in water and evenly distribute sample material throughout the sieve. Lift the sieve straight up out of the water to maintain the distribution of the sample over the sieve.
5. Samples characterized by very high abundances or large sample volume may be sub-sampled using a known fraction of the sample and a random selection process. However, the final number of organisms sorted must sufficiently represent the sampled community. This should be determined on a case-by-case basis in consultation with the senior lab taxonomist.
6. If sub-sampling, use a random number sheet to randomly select one portion of the grid cell to sort. If not sub-sampling, skip to Step 7.
7. Remove a small amount of material from the sieve and place it onto a Petri dish. Make sure not to remove too much material at once, as this will make sorting more difficult and less efficient. Add water or 75% ethanol as necessary to prevent the sample from drying out during sorting.
8. Samples will be sorted under a dissecting microscope into the following broad taxonomic groups: mollusks, crustaceans, and “others.” The sorted debris residue will be saved in a separate container labeled as “sorted residue” in addition to all

prior sample label information. The remaining unsorted sample debris residue will be saved in a separate container labeled “sample residue”. All containers with sample material will be preserved in 75% ethanol and labeled as such.

9. The sorter will record the sample sorting results on an electronic bench sheet for each sample, noting their initials, the date of sorting, effort (in hours), and total counts for each of the three sorting groups.

### **Detailed Taxonomy Procedures**

1. Select a sample for taxonomic processing. Empty each vial into a separate Petri dish (or separate well, if using a divided Petri dish).
2. Using regionally appropriate taxonomic keys, a high-powered dissecting microscope (a minimum of 45X magnification), and a gooseneck lamp identify each individual organism sorted from the sample to lowest practicable taxonomic level (typically genus/species). Record the total number of individuals from each taxon on an electronic bench sheet. Add notes regarding and reduction in taxonomic resolution due to damaged specimens, early life stage, inadequate taxonomic resources, etc.
3. Oligochaete worms, chironomid midges and small polychaete worms may need to be slide mounted for identification. Refer to Epler (2001) for guidance on slide mounting. Make sure that any slides prepared for viewing under the compound microscope are labeled with sample ID, collection date, and number of slides (e.g., 1 of 3, 2 of 3, etc.).

### **3.2.3 Quality Assurance/Quality Control**

The Quality Assurance/Quality Control (QA/QC) protocol for the benthic monitoring program will be comparable to procedures outlined for other similar assessment programs. ESS will randomly perform a quality check on a minimum of 10% of the samples analyzed. This quality check will cover both the sorting and the identification phases of the analysis.

For the sorting phase, if more than 10% error (calculated by dividing the number found in the quality check by the total number of individuals) is found between the sorter and the quality assurance check, an additional sample by this same sorter will undergo the quality assurance check. If the percent error in that sample is also more than 10%, then all samples sorted by that individual will be reprocessed. A record of quality assurance checks will maintained as part of the laboratory bench sheets for the project.

For identification, a second ESS staff member trained in benthic macroinvertebrate identification will randomly check a minimum of 10% of the samples analyzed. The purpose of this check will be to validate the identifications made on the individuals comprising the sample. In addition, ESS may confirm the identifications made by ESS with other regional experts as necessary. Alternatively, a reference collection of voucher specimens may be maintained and checked for taxonomic accuracy. Records of the results of each of the various quality assurance checks described above will be maintained in an electronic laboratory analysis log.



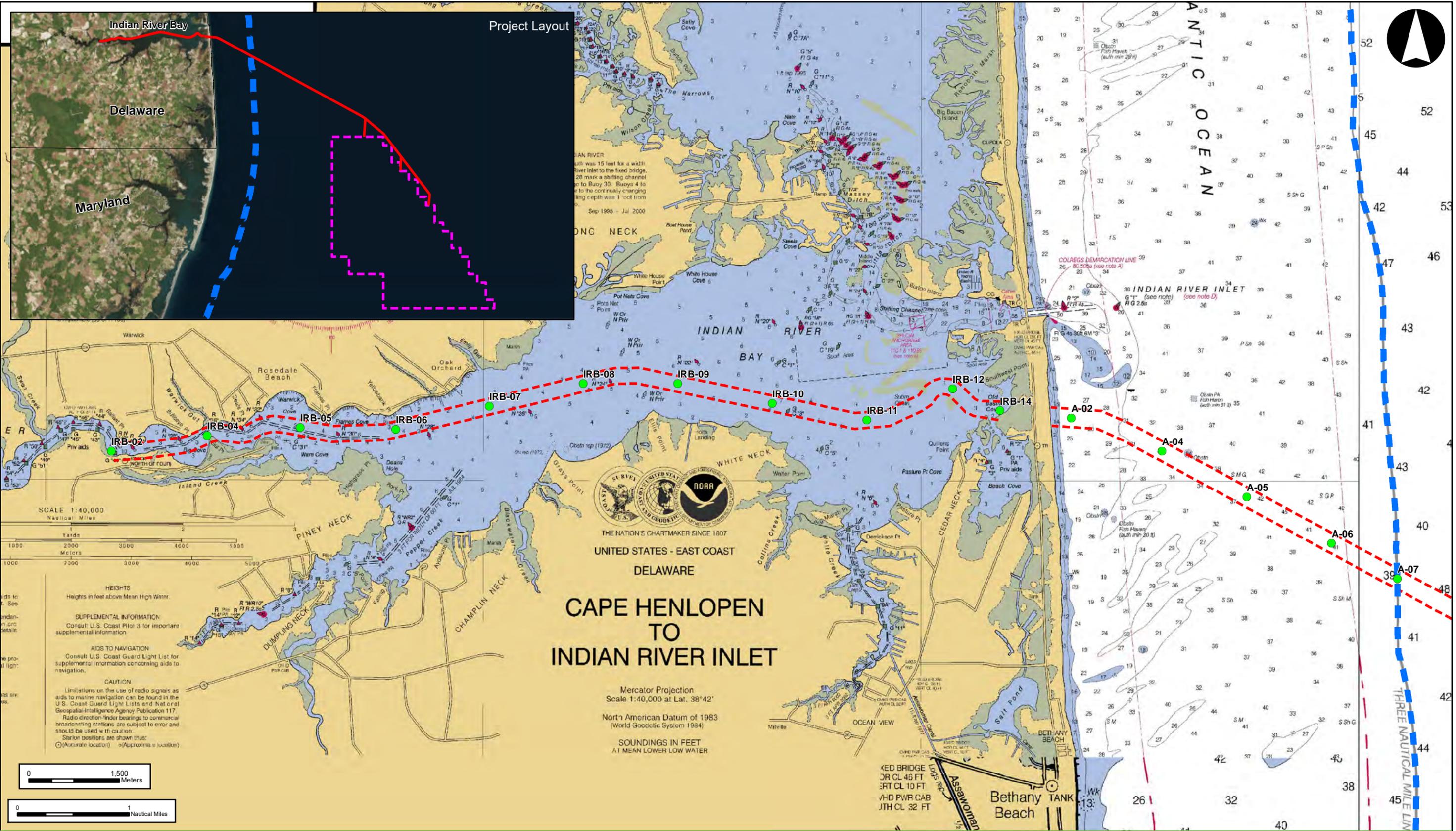
#### **4.0 REFERENCES**

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## Figures

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**US Wind, Inc. - Maryland Offshore Wind Project**  
Indian River Bay and Atlantic Ocean, Delaware

1 inch = 1 nautical miles    1 inch = 1,500 meters

Source: 1) ESS, Export Cable Route, 2016  
2) BOEM, Wind Planning Areas, 2013  
3) NOAA, DNC, 2016

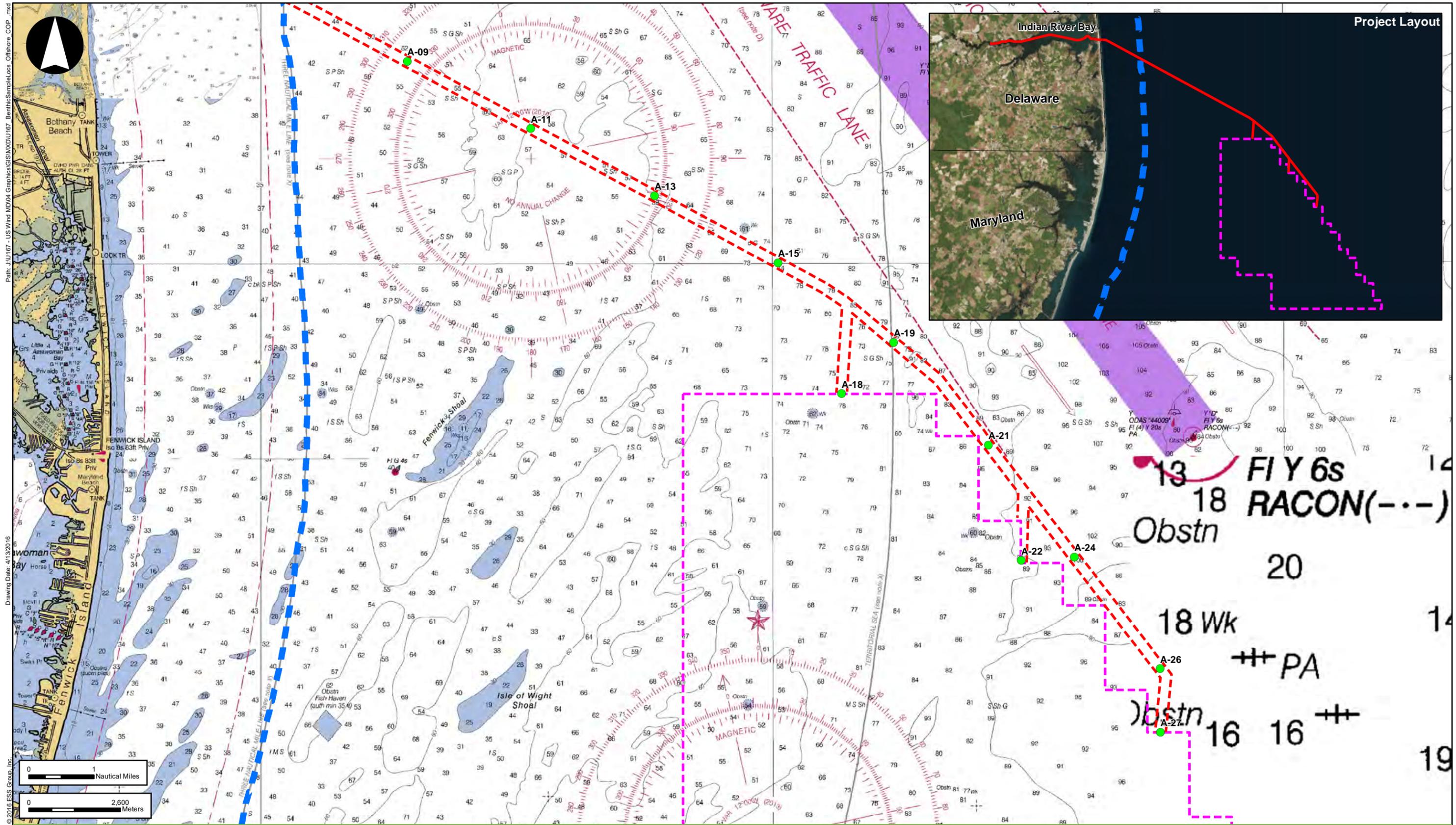
\*Proposed sampling locations are approximate and subject to change based on geophysical survey results.

**Legend**

- Benthic Sampling Location\*
- - - Geophysical Survey Corridor
- ■ ■ State/Federal Water Boundary
- MD Lease Area

**Benthic Sampling Locations**

**Figure 1**  
Sheet 1 of 2



**US Wind, Inc. - Maryland Offshore Wind Project**

Indian River Bay and Atlantic Ocean, Delaware

1 inch = 1 nautical miles    1 inch = 2,550 meters

Source: 1) ESS, Export Cable Route, 2016  
2) BOEM, Wind Planning Areas, 2013  
3) NOAA, DNC, 2016

\*Proposed sampling locations are approximate and subject to change based on geophysical survey results.

**Legend**

- Benthic Sampling Location\*
- - - Geophysical Survey Corridor
- - - State/Federal Water Boundary
- - - MD Lease Area

**Benthic Sampling Locations**

**Figure 1**

## Appendix B

---

### Vibracore Observation Logs





Project: US Wind Offshore Export Cable Survey

Core : **VC-A-01**

Client: \_\_\_\_\_

Location: Northing: 4271628.15

Date: 9/10/16

Easting: 495228.22

Coring Company: Alpine Ocean Seismic Survey

Penetration/Recovery(ft.): 10.0'/10.0'

Coring Method: Vibracore

Seas: 1-2'

Sampling Method: Disposable Liner

Depth to Sediment (ft.): 27.0'

ESS Job No.: U167-022.03

ESS Logger: Michael Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data						
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	ASTM Group Symbol (ASTM D 422)	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Silt/Clay Content (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-A-01			Moist, gray, FINE SAND and SILT, trace wood.	SP-SM	0.1%	76.1%	23.8%	19.2%	1.6%
1				Moist, gray, SILTY CLAY, trace fine sand.						
2				Moist, gray, FINE SAND, some silt, little medium sand, trace clay.						
3										
4										
5										
6										
7										
8										
9										
10										

**LEGEND:**  
 ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NP: non-plastic

**PROPORTIONS USED:**  
 Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**  
 Coordinate System: UTM18, NAD83, FT  
 Samples placed in freezer on 9/10/16 @1500.



Project: US Wind Offshore Export Cable Survey

Core : **VC-A-02**

Client: \_\_\_\_\_

Location: Northing: 4271591.04

Date: 9/10/16

Easting: 495220.07

Coring Company: Alpine Ocean Seismic Survey

Penetration/Recovery(ft.): 10.0'/10.0'

Coring Method: Vibracore

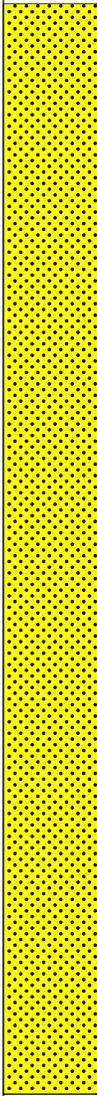
Seas: 1-2'

Sampling Method: Disposable Liner

Depth to Sediment (ft.): 25.0'

ESS Job No.: U167-022.03

ESS Logger: Michael Phillips

Depth Below SWI (feet)	Sample Number	Field Shear Strength (PSI)	Sediment Log	Field Observations	Geotechnical Laboratory Data					
				Materials Description	ASTM Group Symbol (ASTM D 422)	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Silt/Clay Content (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-A-02			Moist, light gray to gray, FINE SAND, little medium sand, little silt, trace shells, trace wood.	SP	0.2%	88%	11.8%	19.3% 16.1%	0.9%
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NP: non-plastic

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**

Coordinate System: UTM18, NAD83, FT  
 Samples placed in freezer on 9/10/16 @1500.



Project: US Wind Offshore Export Cable Survey

Core : **VC-A-03**

Client: \_\_\_\_\_

Location: Northing: 4271557.25

Date: 9/7/16

Easting: 495279.34

Coring Company: Alpine Ocean Seismic Survey

Penetration/Recovery(ft.): 10.0/10.8

Coring Method: Vibracore

Seas: 2'-3'

Sampling Method: Disposable Liner

Depth to Sediment (ft.): 25.0'

ESS Job No.: U167-022.03

ESS Logger: Michael Phillips

Depth Below SWI (feet)	Sample Number	Field Shear Strength (PSI)	Sediment Log	Field Observations	Geotechnical Laboratory Data					
				Materials Description	ASTM Group Symbol (ASTM D 422)	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Silt/Clay Content (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-A-03			Moist to wet, brown, FINE and MEDIUM SAND, trace shells, trace medium coarse sand.	SP	0.3	94%	5.7%	16.4%	1%
	VC-A-03-DUP								13.8%	
1	VC-A-03-MS			Moist, gray to light gray, FINE SAND, some medium sand, trace silt, light brown color @ (5.5'-6.5').						
	VC-A-03-MSD									
2										
3										
4										
5										
6										
7										
8										
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NP: non-plastic

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**

Coordinate System: UTM18, NAD83, FT  
 Collect sediment Duplicate, MS and MSD Samples @1930.





Project: US Wind Offshore Export Cable Survey

Core : **VC-A-04**

Client: \_\_\_\_\_

Location: Northing: 4271047.15

Date: 9/10/16

Easting: 496730.53

Coring Company: Alpine Ocean Seismic Survey

Penetration/Recovery(ft.): 10.0/10.0

Coring Method: Vibracore

Seas: 1'-2'

Sampling Method: Disposable Liner

Depth to Sediment (ft.): 36.0'

ESS Job No.: U167-022.03

ESS Logger: Michael Phillips

Depth Below SWI (feet)	Sample Number	Field Shear Strength (PSI)	Sediment Log	Field Observations	Geotechnical Laboratory Data					
				Materials Description	ASTM Group Symbol (ASTM D 422)	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Silt/Clay Content (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-A-04-S1			Moist, grayish brown, FINE SAND and SILT, some medium sand, trace shells.	SM	1.2%	53.8%	45%	51% 33.4%	3.8%
1				Moist, dark gray, SILT, trace clay, trace organics.						
2	VC-A-04-S2			Moist, gray, FINE SAND, some medium sand, little silt, trace organics.	SP-SM		87.7%	12.3%	24.6% 21.2%	1.5%
3										
4										
5	VC-A-04-S3			Moist, dark green, SILT, little fine sand, little medium sand, trace clay, very dense.	ML		28.1%	71.9%	35.8% 27.2%	2.6%
6										
7										
8										
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NP: non-plastic

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**

Coordinate System: UTM18, NAD83, FT  
 Samples placed in freezer on 9/10/16 @1500.



Project: US Wind Offshore Export Cable Survey

Core : **VC-A-05**

Client: \_\_\_\_\_

Location: Northing: 4270284.27

Date: 9/10/16

Easting: 498135.69

Coring Company: Alpine Ocean Seismic Survey

Penetration/Recovery(ft.): 10.0/9.2

Coring Method: Vibracore

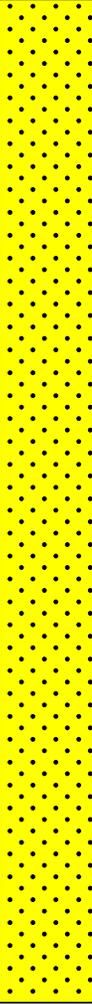
Seas: 3'-4'

Sampling Method: Disposable Liner

Depth to Sediment (ft.): 42.0'

ESS Job No.: U167-022.03

ESS Logger: Michael Phillips

Depth Below SWI (feet)	Field Observations				Geotechnical Laboratory Data						
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	ASTM Group Symbol (ASTM D 422)	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Silt/Clay Content (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)	
0	VC-A-05			Moist, light gray, FINE and MEDIUM SAND, trace silt, light brown color @(2.0'-3.0').	SP		90.6%	9.4%	18.4% 14.2%	0.3%	
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NP: non-plastic

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**

Coordinate System: UTM18, NAD83, FT  
 Samples placed in freezer on 9/10/16 @1500.



Project: US Wind Offshore Export Cable Survey

Core : **VC-A-06**

Client: \_\_\_\_\_

Location: Northing: 4269496.49

Date: 9/13/16

Easting: 499553.21

Coring Company: Alpine Ocean Seismic Survey

Penetration/Recovery(ft.): 10.9/11.0

Coring Method: Vibracore

Seas: 0'-1'

Sampling Method: Disposable Liner

Depth to Sediment (ft.): 44.0'

ESS Job No.: U167-022.03

ESS Logger: Michael Phillips

Depth Below SWI (feet)	Sample Number	Field Shear Strength (PSI)	Sediment Log	Field Observations	Geotechnical Laboratory Data					
				Materials Description	ASTM Group Symbol (ASTM D 422)	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Silt/Clay Content (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-A-06-S1			Moist, brown to light gray, MEDIUM SAND, little coarse sand, little fine sand, trace silt, trace shells.	SW	21.5%	72.7%	5.8%	14.8%	0.7%
1										
2										
3										
4										
5										
6										
7	VC-A-06-S2			Moist, light gray, MEDIUM SAND, some fine sand, trace silt, trace coarse sand.	SP	1.0%	89.7%	9.3%	18.1%	1%
8										
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NP: non-plastic

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**

Coordinate System: UTM18, NAD83, FT

Samples placed in freezer on 9/13/16 @1100.



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/7/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

Core : **VC-IRB-01**  
 Location: Northing: 4271066.96  
 Easting: 479360.20  
 Penetration/Recovery(ft.): 10.0' / 8.4'  
 Seas: 0-1'  
 Depth to Sediment: 10.6'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data						
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-01 @1820			Moist, Dark Gray, SILTY CLAY, trace fine sand.	SM	1.1	64.8	34.1	113	6.1
1										
2		2.84								
3										
4		7.11								
5		2.84								
6				Moist, Gray, FINE SAND, trace silt.						
7				Moist, Gray, SILTY CLAY						
8		9.96								
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**

Cut off ~ 6" of empty space at the top of the core.



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/7/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-02**  
 Location: Northing: 4271035.16  
 Easting: 479364.12  
 Penetration/Recovery(ft.): 11.0' / 8.6'  
 Seas: 0-1'  
 Depth to Sediment: 5.9'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data						
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-02 @1440			Moist, gray, SILTY CLAY, trace fine sand.	SM	21.7	35.9	42.4	161	9.8
1										
2		1.42								
3										
4		7.11								
5		4.27								
6										
7										
8		4.27		Moist, brown, SILTY CLAY, little organics.						
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**

Collect Duplicate sample, labeled VC-IRB-25 @1445.



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/7/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-03**  
 Location: Northing: 4271003.82  
 Easting: 479427.21  
 Penetration/Recovery(ft.): 9.0' / 6.7'  
 Seas: 0-1'  
 Depth to Sediment: 6.6'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Sample Number	Field Shear Strength (PSI)	Sediment Log	Field Observations	Geotechnical Laboratory Data					
				Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-03-S1 @1540			Moist, gray, SILTY CLAY, little fine sand, trace shells.	SM	1.0	66.7	32.3	71.6	3.7
1		1.42								
3	VC-IRB-03-S2 @1550			Moist, dark gray, SILTY CLAY, little organics, trace fine sand.	OH	0.6	47	52.4	176	17
4		4.27								
5										
6										
7										
8										
9										
10										

**LEGEND:**  
 ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

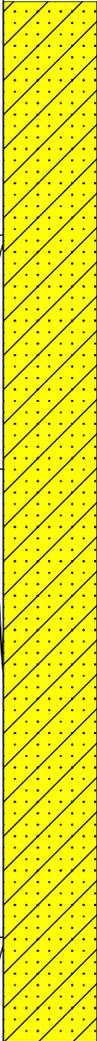
**PROPORTIONS USED:**  
 Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**  
 Two attempts for target penetration, limited recovery each attempt. Highest recovery kept for processing.



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/6/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-04**  
 Location: Northing: 4271290.45  
 Easting: 480905.7.0  
 Penetration/Recovery(ft.): 11.0' / 8.9'  
 Seas: 0-1'  
 Depth to Sediment: 18.0'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data						
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-04 @1840			Moist, gray, SILTY CLAY, trace organics, trace shells.	OH	0.1	25.1	74.9	94.1	8.2
1										
2		10.67								
3										
4		7.11								
5		7.11								
6										
7										
8		8.53								
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/6/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-05**  
 Location: Northing: 4271418.96  
 Easting: 482446.81  
 Penetration/Recovery(ft.): 11.0' / 7.7'  
 Seas: 0-1'  
 Depth to Sediment: 5.1'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data						
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-05-S1 @1930	2.84		Moist, gray, SILTY CLAY, trace shells , trace organics.	OH	0.8	32.6	66.6	135	6.6
1										
2		4.27								
3		5.69								
4										
5	VC-IRB-05-S2 @1940	5.69		Moist, dark brown, SILT and ORGANICS.	OH	14.3	34.9	50.8	578	57
6										
7										
8										
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

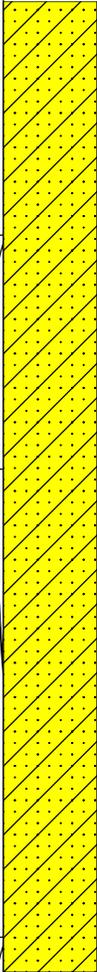
**NOTES:**





Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/6/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-06**  
 Location: Northing: 4271394.04  
 Easting: 484030.34  
 Penetration/Recovery(ft.): 11.0' / 8.3'  
 Seas: 0-1'  
 Depth to Sediment: 5.6'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data						
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-06 @2030			Moist, gray, SILTY CLAY, trace shells , decaying organics odor.	OH	0.3	33.8	65.9	173	11
1										
2		1.42								
3										
4		2.84								
5		4.27								
6										
7										
8		4.27								
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/7/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-07-ALT**  
 Location: Northing: 4271859.25  
 Easting: 485961.32  
 Penetration/Recovery(ft.): 8.0' / 6.3'  
 Seas: 0-1'  
 Depth to Sediment: 9.1'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations				Geotechnical Laboratory Data					
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-07-ALT-S1 @1900			Moist, gray, SILTY CLAY, trace shells.	SM	0.4	68.3	31.3	173	10.0
1		1.42		Moist, dark gray, SILTY CLAY, little organics.						
2		1.42		Moist, gray, FINE SAND, trace silt , trace fine gravel.	SM	0.1	81.9	18.1	15.4	0.66
3		1.42								
4	VC-IRB-07-ALT-S2 @1910									
5		2.84								
6		9.96								
7										
8										
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/8/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-08-ALT**  
 Location: Northing: 4272031.74  
 Easting: 486667.56  
 Penetration/Recovery(ft.): 10.5' / 9.8'  
 Seas: 0-1'  
 Depth to Sediment: 7.4'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Sample Number	Field Shear Strength (PSI)	Sediment Log	Field Observations	Geotechnical Laboratory Data					
				Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-08-ALT-S1 @1810			Moist, gray, SILTY CLAY, trace shells.	OH	0.9	29.0	70.1	102	4.0
1										
2		1.42								
3	VC-IRB-08-ALT-S2 @1820			Moist, dark gray, SILTY CLAY, little organics.	OH	21.7	28.5	49.8	647	3.2
4		3.56								
5		0.00								
6	VC-IRB-08-ALT-S2 @1830			Moist, gray, FINE SAND, trace silt , trace medium sand.	SM	0.1	82.9	17.1	16.0	0.83
7										
8		2.84								
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/8/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-09-ALT**  
 Location: Northing: 4272435.85  
 Easting: 489063.88  
 Penetration/Recovery(ft.): 11.0' / 10.0'  
 Seas: 0-1'  
 Depth to Sediment: 10.0'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations				Geotechnical Laboratory Data					
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-09-ALT @1600			Moist, gray, SILTY CLAY, trace organics, trace shells.	OH	1.2	33.7	65.1	99.0	6.0
1				Moist, dark gray, SILTY CLAY, little organics.						
2				Moist, gray, SILTY CLAY, trace organics.						
3		4.27								
4		5.69								
5		7.11								
6										
7										
8		5.69								
9										
10		14.22								

**LEGEND:**  
 ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**  
 Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**  
 1'-2' photolog not color change, angle of core splitting causing distortion.



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/7/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-10**  
 Location: Northing: 4272637.09  
 Easting: 490397.23  
 Penetration/Recovery(ft.): 11.0' / 9.2'  
 Seas: 0-1'  
 Depth to Sediment: 7.5'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Sample Number	Field Shear Strength (PSI)	Sediment Log	Field Observations	Geotechnical Laboratory Data					
				Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-10 @1705			Moist, gray, SILTY CLAY, trace organics, trace fine sand, trace shells.	OH	0.8	40.6	58.6	82.6	3.8
1	VC-IRB-10 -MS @1705									
2	VC-IRB-10 -MSD @1705									
		5.69								
		7.11								
		2.84								
		7.11								
10										

**LEGEND:**  
 ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**  
 Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**  
 Collect MS/MSD samples.



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/10/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-11-ALT**  
 Location: Northing: 4272361.77  
 Easting: 492077.45  
 Penetration/Recovery(ft.): 10.0' / 8.0'  
 Seas: 0-1'  
 Depth to Sediment: 15.8'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations				Geotechnical Laboratory Data					
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-11-ALT-S1 @1540			Moist, gray, FINE AND MEDIUM SAND, trace silt, trace shells.	SP	0.1	94.6	5.4	18.0	0.55
1										
2		5.69								
3										
4		1.42								
5		15.65								
6	VC-IRB-11-ALT-S2 @1550			Moist, dark gray, FINE SAND AND SILT, trace shells.	SM	1.1	50.2	48.7	69.8	0.59
7										
8		28.45								
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/6/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-12**  
 Location: Northing: 4272066.26  
 Easting: 493269.84  
 Penetration/Recovery(ft.): 10.0' / 8.9'  
 Seas: 0-1'  
 Depth to Sediment: 10.1'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data							
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)	
0	VC-IRB-12-S1 @1230			Moist, gray, FINE SAND, trace shells, trace silt.	SM	0.7	77.3	22.0	22.7	0.61	
1		1.42									5.69
2											
3	VC-IRB-12-S2 @1240			Moist, gray, CLAY, trace fine sand, trace shells.	OL	0.1	35.6	64.4	59.8	3.3	
4		8.53									7.11
5											
6											
7											
8		8.53									
9											
10											

**LEGEND:**  
 ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**  
 Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/10/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-13-ALT**  
 Location: Northing: 4271736.55  
 Easting: 494000.18  
 Penetration/Recovery(ft.): 11.0' /9.2'  
 Seas: 0-1'  
 Depth to Sediment: 3.9'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data						
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-13-ALT-S1 @1915			Moist, gray, FINE SAND, trace silt, trace shells.	OL	0.1	24.6	75.4	21.6	0.29
1		12.80								
2		14.22								
3	VC-IRB-13-ALT-S2 @1925			Moist, gray, SILTY CLAY, trace shells.	OL	0.1	35.2	64.8	15.2	2.9
4		9.96								
5		8.53								
9		8.53								
10										

**LEGEND:**  
 ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**  
 Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**





Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/9/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-14-ALT**  
 Location: Northing: 4271709.54  
 Easting: 493997.53  
 Penetration/Recovery(ft.): 11.0' /9.1'  
 Seas: 0-1'  
 Depth to Sediment: 3.3'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data							
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)	
0	VC-IRB-14-ALT-S1 @1700			Moist, gray, FINE SAND, trace shells, trace silt.	SP	0.1	93.6	6.4	22.2	0.34	
1											
2		7.11									
3											
4	VC-IRB-14-ALT-S2 @1710			Moist, dark gray, FINE SAND AND SILT, trace shells.	SP	0.1	56.2	43.8	28.9	2.1	
5		8.53									7.11
6											
7											
8											
9		8.53									
10											

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/9/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-15-ALT**  
 Location: Northing: 4271676.54  
 Easting: 493994.06  
 Penetration/Recovery(ft.): 11.0' /8.6'  
 Seas: 0-1'  
 Depth to Sediment: 3.5'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data							
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)	
0	VC-IRB-15-ALT-S1 @1545			Moist, gray, FINE SAND, trace shells, trace silt.	SP	0.1	91.4	8.6	23.4	0.47	
1											
2		7.11									
3											
4	VC-IRB-15-ALT-S2 @1555			Moist, dark gray, FINE SAND AND SILT, trace shells.	SP	0.1	59.4	40.6	32.8	2.0	
5		8.53									
6		7.11									
7											
8		12.80									
9											
10											

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

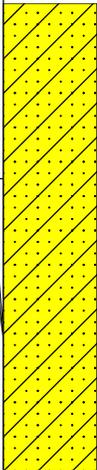
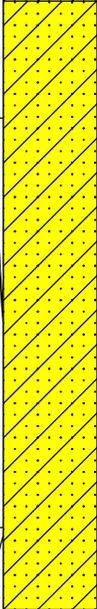
Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**



Project: US Wind  
 Site: Indian River Bay, Delaware  
 Date: 10/10/17  
 Coring Company: Alpine  
 Coring Method: Vibracore  
 Sampling Method: Grab  
 ESS Job No.: U167-022

**Core : VC-IRB-24**  
 Location: Northing: 4272285.03  
 Easting: 487980.22  
 Penetration/Recovery(ft.): 8.9' /9.2'  
 Seas: 0-1'  
 Depth to Sediment: 10.5'  
 ESS Logger: M.Phillips

Depth Below SWI (feet)	Field Observations			Geotechnical Laboratory Data						
	Sample Number	Field Shear Strength (PSI)	Sediment Log	Materials Description	USCS Group Symbol	Gravel Content (%) (ASTM D 422)	Sand Content (%) (ASTM D 422)	Fines (%) (ASTM D 422)	Moisture Content (%) (ASTM D 2974)	Organic Matter (%) (ASTM D 2974)
0	VC-IRB-24-S1 @1445			Moist, gray, SILTY CLAY, trace shells.	OL	0.1	32.5	67.5	51.5	3.9
1		4.27								
2	VC-IRB-24-S2 @1455			Moist, dark gray, SILTY CLAY, little organics.	SM	4.0	56.3	39.7	93.0	13.0
3		7.11								
4										
5										
6										
7										
8										
9										
10										

**LEGEND:**

ND: not detected  
 N/A: not applicable  
 SWI: sediment water interface  
 NM: not measured  
 NA: not analyzed

**PROPORTIONS USED:**

Trace: <10%  
 Little: 10-20%  
 Some: 20-35%  
 And: 35-50%

**NOTES:**

## Appendix C

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### Vibracore Photographic Logs





0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



9-10 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



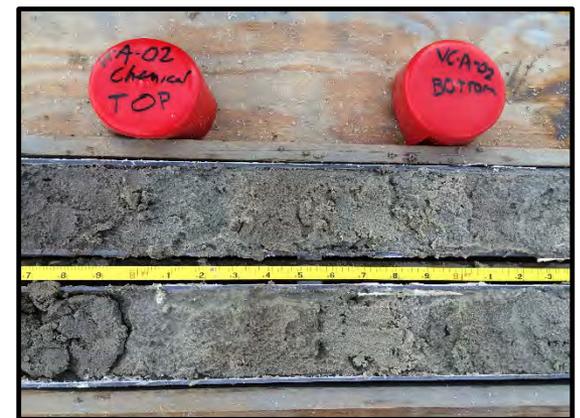
5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface

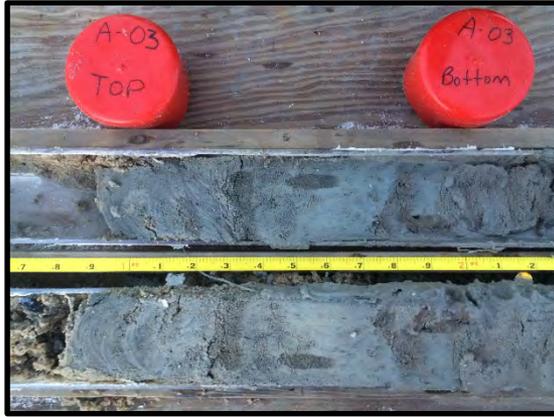


9-10 feet below sediment water interface





0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



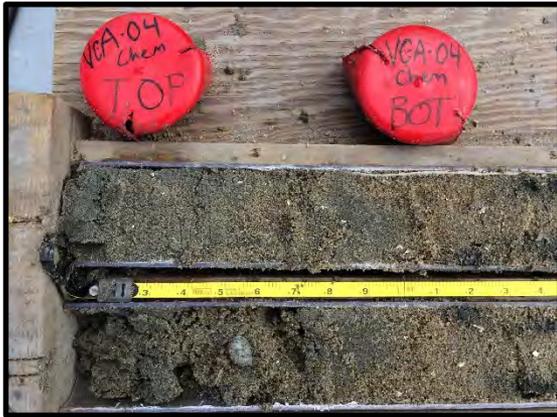
7-8 feet below sediment water interface



8-9 feet below sediment water interface



9-10 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



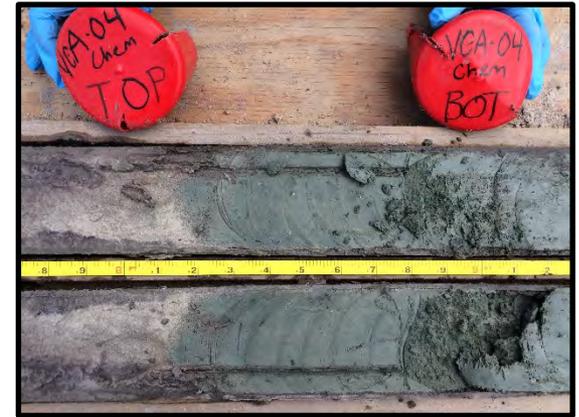
5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



9-10 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



9-10 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



9-10 feet below sediment water interface





0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface





0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



9-10 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface





6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



9-10 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



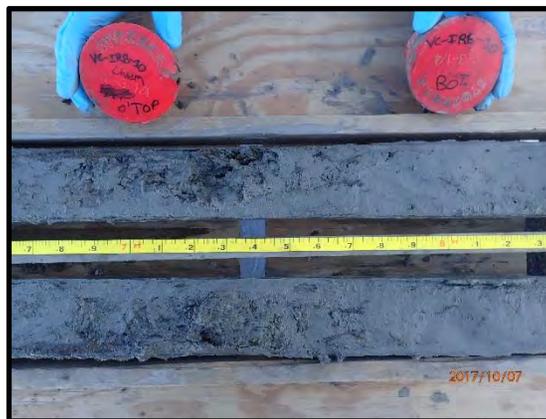
4-5 feet below sediment water interface



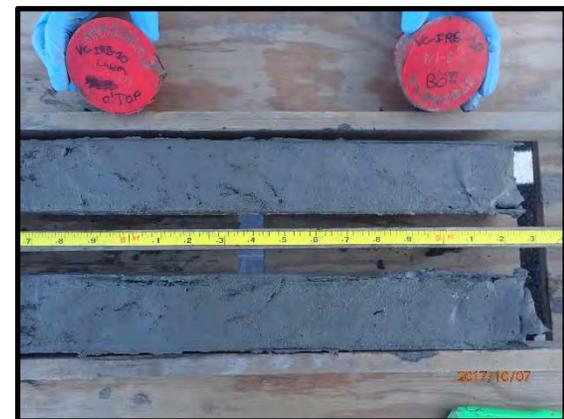
5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface

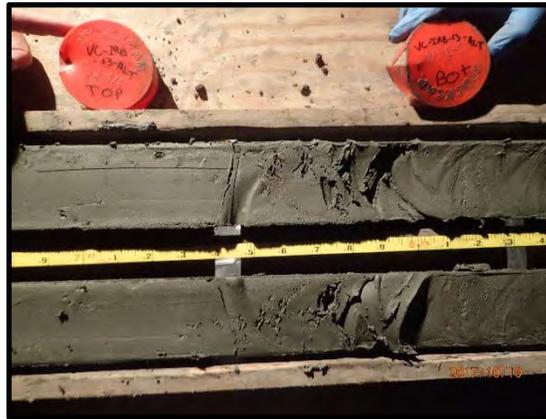


5-6 feet below sediment water interface





6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



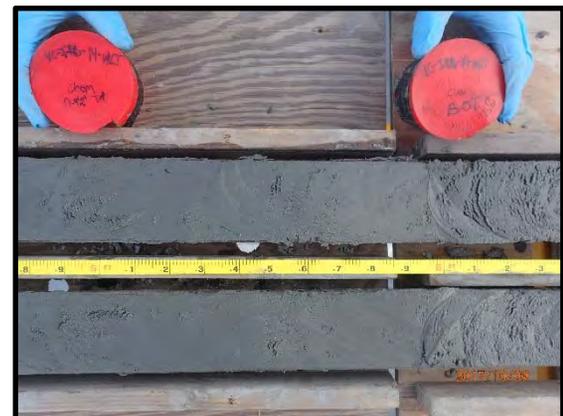
2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



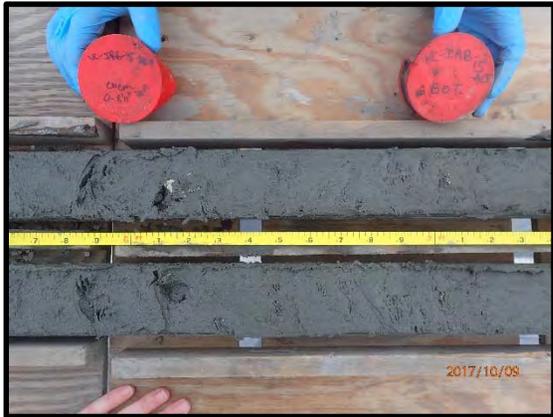
3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface



0-1 feet below sediment water interface



1-2 feet below sediment water interface



2-3 feet below sediment water interface



3-4 feet below sediment water interface



4-5 feet below sediment water interface



5-6 feet below sediment water interface



6-7 feet below sediment water interface



7-8 feet below sediment water interface



8-9 feet below sediment water interface

## Appendix D

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### Detailed Sediment Analytical Results Tables





**US WIND  
OFFSHORE ATLANTIC (DELAWARE)  
SEPTEMBER 2016 SEDIMENT SAMPLE RESULTS**

LOCATION	VC-A-01	VC-A-02	VC-A-03	VC-A-03-DUP	VC-A-04-S1	VC-A-04-S2	VC-A-04-S3	VC-A-05	VC-A-06-S1	VC-A-06-S2											
SAMPLING DATE	9/10/2016	9/10/2016	9/7/2016	9/7/2016	9/10/2016	9/10/2016	9/10/2016	9/10/2016	9/13/2016	9/13/2016											
LAB SAMPLE ID	L1629122-01	L1629122-02	L1629122-03	L1629122-04	L1629122-05	L1629122-06	L1629122-07	L1629122-08	L1629122-09	L1629122-10											
	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual										
Liquid Limit	-	16		18		21		-	-	43		20		47		18		20		18	
Plastic Limit	-	15		19		22		-	-	28		17		33		19		18		18	
Plasticity Index	-	1		NP	U	NP	U	-	-	15		3		14		NP	U	2		NP	U
Bulk Density	lbs/ft3	127.8		107.6		101.7		-	-	91.67		116.1		81.44		115.1		121		123.6	
Moisture	%	19.2		19.3		16.4		-	-	51		24.6		35.8		18.4		14.8		18.1	
Dry Density	lbs/ft3	107.3		90.23		87.36		-	-	60.73		93.14		59.97		97.18		105.4		104.6	
Solids, Total	%	83.3		83.9		86.2		86.9		66.6		78.8		72.8		85.8		85.6		85.6	
Solids, Ash	%	83		83		86		-	-	63		78		71		86		85		82	
Nitrogen, Ammonia	mg/kg	2.2	J	4.3	J	8.3	U	8.5	U	20		11		77		8.4	U	2.8	J	8.7	U
Phosphorus, Total	mg/kg	68		35		23		31		520		130		200		93		110		120	
% Soot (Rep 1)	%																				
% Soot (Rep 2)	%																				
Moisture	%	16.7		16.1		13.8		13.1		33.4		21.2		27.2		14.2		14.4		14.4	
Specific Gravity	-	2.48		2.69		2.62		-	-	2.65		2.63		2.72		2.71		2.68		2.47	
Organic Matter, Total	%	1.6		0.9		1		-	-	3.8		1.5		2.6		0.3		0.7		1	
Total Organic Carbon (Rep1)	mg/kg																				
Total Organic Carbon (Rep2)	mg/kg																				
Cobbles	%	0.1	U	0.1	U	0.1	U	-	-	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
% Coarse Gravel	%	0.1	U	0.1	U	0.1	U	-	-	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
% Fine Gravel	%	0.1		0.2		0.3		-	-	1.2		0.1	U	0.1	U	0.1	U	21.5		1	
% Coarse Sand	%	0.6		0.1		0.7		-	-	2.3		0.5		0.6		1.4		15.7		4.3	
% Medium Sand	%	16.3		15.3		28.8		-	-	27.2		22.4		11.4		32.7		45.2		51.7	
% Fine Sand	%	59.2		72.6		64.5		-	-	24.3		64.8		16.1		56.5		11.8		33.7	
% Silt Fine	%	20.2		10.8		5.2		-	-	37.2		11.1		64.9		8.9		5.5		8.3	
% Clay Fine	%	3.6		1		0.5		-	-	7.8		1.2		7		0.5		0.3		1	
% Total Fines	%	23.8		11.8		5.7		-	-	45		12.3		71.9		9.4		5.8		9.3	
4,4'-DDD	0.00122 mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
4,4'-DDE	0.00207 mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
4,4'-DDT	0.00119 mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
Aldrin	mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
alpha-BHC	1.36 mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
alpha-Chlordane	mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
beta-BHC	mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
delta-BHC	mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
Dieldrin	0.00072 mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
Endosulfan I	0.000107 mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
Endosulfan II	0.000107 mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
Endosulfan sulfate	mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
Endrin	0.00267 mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
Endrin aldehyde	mg/kg	0.00011	U	0.00011	U	0.00011	U	0.00011	U	0.00014	U	0.00012	U	0.00013	U	0.00011	U	0.00011	U	0.00011	U
Endrin ketone	mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
gamma-BHC	mg/kg	0.00015		0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
gamma-Chlordane	mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
Heptachlor	mg/kg	0.00003	U	0.00003	U	0.00003	U	0.00003	U	0.00004	U	0.00004	U	0.00004	U	0.00003	U	0.00003	U	0.00003	U
Heptachlor epoxide (B)	0.0006 mg/kg	0.00007	U	0.00007	U	0.00007	U	0.00007	U	0.00009	U	0.00008	U	0.00009	U	0.00007	U	0.00007	U	0.00007	U
Methoxychlor	0.0296 mg/kg	0.00039	U	0.00039	U	0.00037	U	0.00038	U	0.00048	U	0.00041	U	0.00045	U	0.00038	U	0.00038	U	0.00038	U
Toxaphene	0.536 mg/kg	0.00198	U	0.00199	U	0.0019	U	0.00192	U	0.00243	U	0.00207	U	0.00229	U	0.00194	U	0.00193	U	0.00191	U
Chlordane	mg/kg	0.00198	U	0.00199	U	0.0019	U	0.00192	U	0.00243	U	0.00207	U	0.00229	U	0.00194	U	0.00193	U	0.00191	U

**US WIND  
OFFSHORE ATLANTIC (DELAWARE)  
SEPTEMBER 2016 SEDIMENT SAMPLE RESULTS**

LOCATION	VC-A-01	VC-A-02	VC-A-03	VC-A-03-DUP	VC-A-04-S1	VC-A-04-S2	VC-A-04-S3	VC-A-05	VC-A-06-S1	VC-A-06-S2												
SAMPLING DATE	9/10/2016	9/10/2016	9/7/2016	9/7/2016	9/10/2016	9/10/2016	9/10/2016	9/10/2016	9/13/2016	9/13/2016												
LAB SAMPLE ID	L1629122-01	L1629122-02	L1629122-03	L1629122-04	L1629122-05	L1629122-06	L1629122-07	L1629122-08	L1629122-09	L1629122-10												
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual						
<b>PAHs</b>																						
Naphthalene	0.0346	mg/kg	0.00191	J	0.00157	J	0.00177	J	0.0016	J	0.00416	J	0.00191	J	0.00171	J	0.00138	J	0.00142	J	0.00297	J
Acenaphthylene		mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.00073	J	0.00035	J	0.00037	J	0.00114	J	0.00449	U	0.00458	U
Acenaphthene	0.00671	mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00085	J	0.00095	J	0.00501	U	0.00544	U	0.00438	U	0.00449	U	0.00458	U
Fluorene	0.0212	mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.00184	J	0.00053	J	0.00544	U	0.00438	U	0.00449	U	0.00037	J
Phenanthrene	0.0867	mg/kg	0.0006	J	0.00474	U	0.00056	J	0.00444	U	0.00404	J	0.00116	J	0.00072	J	0.00438	U	0.00077	J	0.00078	J
Anthracene	0.0469	mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.00113	J	0.00501	U	0.00544	U	0.00438	U	0.00449	U	0.00458	U
Fluoranthene	0.113	mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.0031	J	0.00501	U	0.00544	U	0.00438	U	0.00449	U	0.00458	U
Pyrene	0.153	mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.00178	J	0.00054	J	0.00544	U	0.00438	U	0.00449	U	0.00458	U
Benz(a)anthracene		mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.00564	U	0.00501	U	0.00544	U	0.00438	U	0.00449	U	0.00458	U
Chrysene	0.108	mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.00191	J	0.00054	J	0.00049	J	0.00438	U	0.00449	U	0.00458	U
Benzo(b)fluoranthene		mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.00564	U	0.00079	J	0.00544	U	0.00438	U	0.00449	U	0.00458	U
Benzo(k)fluoranthene		mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.00564	U	0.00501	U	0.00544	U	0.00438	U	0.00449	U	0.00458	U
Benzo(a)pyrene	0.0888	mg/kg	0.00279	J	0.00298	J	0.00263	J	0.00263	J	0.00384	J	0.00313	J	0.00333	J	0.00262	J	0.00288	J	0.00269	J
Indeno(1,2,3-cd)pyrene		mg/kg	0.00334	J	0.00344	J	0.00297	J	0.00298	J	0.00531	J	0.00377	J	0.00387	J	0.00314	J	0.00334	J	0.00305	J
Dibenz(a,h)anthracene		mg/kg	0.00233	J	0.0024	J	0.00437	U	0.00444	U	0.00309	J	0.00257	J	0.00269	J	0.00438	U	0.00226	J	0.00458	U
Benzo(g,h,i)perylene		mg/kg	0.00203	J	0.00214	J	0.00183	J	0.00184	J	0.00383	J	0.00245	J	0.00251	J	0.0019	J	0.00208	J	0.00185	J
2-Methylnaphthalene	0.0202	mg/kg	0.00084	J	0.00059	J	0.00062	J	0.00066	J	0.00214	J	0.00081	J	0.00075	J	0.00438	U	0.00449	U	0.00125	J
2-Chloronaphthalene		mg/kg	0.00452	U	0.00474	U	0.00437	U	0.00444	U	0.00074	J	0.00501	U	0.00544	U	0.00438	U	0.00449	U	0.00458	U
<b>Total Metals</b>																						
Aluminum, Total		mg/kg	4020		1940		2980		2000		11700		2260		8890		1330		4410		5880	
Antimony, Total		mg/kg	0.069		0.04		0.035		0.035		0.108		0.028	J	0.096		0.027	J	0.037		0.034	J
Arsenic, Total	7.24	mg/kg	0.938		0.407		0.347		0.269		7.3		1.25		1.53		0.541		1.59		0.307	
Barium, Total		mg/kg	8.21		2.19		3.46		2.57		39.8		6.75		23.9		4.78		3.04		2.3	
Beryllium, Total		mg/kg	0.137		0.057		0.069		0.04		0.773		0.165		1.03		0.102		0.149		0.182	
Cadmium, Total	0.68	mg/kg	0.007	J	0.005	J	0.003	J	0.004	J	0.126		0.01	J	0.006	J	0.111		0.009	J	0.016	
Calcium, Total		mg/kg	164		123		120	J	105	J	1260		383		1960		135		2560		177	
Chromium, Total	52.3	mg/kg	4.56		2.59		3.74		3.1		35.4		5.82		22.6		2.81		6.17		5.02	
Cobalt, Total		mg/kg	0.554		0.745		0.363		0.243		10.2		1.06		6.2		2.01		1.16		0.782	
Copper, Total	18.7	mg/kg	1.5		0.726		1		0.751		8.45		1.46		6.1		1.17		1.73		1.75	
Iron, Total		mg/kg	1680		794		696		546		32300		4470		14600		1340		2600		1050	
Lead, Total	30.2	mg/kg	3.87		2.23		2.28		1.91		8.6		2.46		14.6		1.44		1.84		1.45	
Magnesium, Total		mg/kg	458		287		332		280		4610		489		2750		250		680		481	
Manganese, Total		mg/kg	5.04		3.25		3.49		3.01		210		17.9		80.2		7.64		15.4		7.02	
Mercury, Total	0.13	mg/kg	0.011	J	0.007	J	0.007	J	0.008	J	0.022		0.008	J	0.037		0.007	J	0.011	J	0.01	J
Nickel, Total	15.9	mg/kg	1.57		1.3		1.22		0.844		21.3		2.48		13.4		2.2		2.73		2.46	
Potassium, Total		mg/kg	363		202		286		215		2490		328		1480		144		353		258	
Selenium, Total		mg/kg	0.151		0.04	J	0.096		0.042	J	0.659		0.192		0.532		0.106		0.124		0.079	
Silver, Total	0.73	mg/kg	0.02	J	0.014	J	0.012	J	0.016	J	0.058		0.014	J	0.042		0.008	J	0.011	J	0.017	J
Sodium, Total		mg/kg	2340		1570		1590		1400		4930		1430		3470		623		2110		1710	
Thallium, Total		mg/kg	0.035	J	0.016		0.025		0.017		0.507		0.037		0.137		0.018		0.023	J	0.023	J
Vanadium, Total		mg/kg	8.49		4.29		6.14		4.38		34.8		6.47		12.4		2.79		9.56		6.35	
Zinc, Total	124	mg/kg	4.46		3.12		3.63		2.49		57.4		7.04		37.8		30.7		11.5		9.07	
<b>Dioxins/Furans</b>																						
2,3,7,8-TCDD		pg/g	0.906	U	0.931	U	0.933	U	0.914	U	0.947	U	0.944	U	0.953	U	0.958	U	0.949	U	0.893	U
1,2,3,7,8-PeCDD		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	4.77	U	4.79	U	4.75	U	4.47	U
1,2,3,4,7,8-HxCDD		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	4.77	U	4.79	U	4.75	U	4.47	U
1,2,3,6,7,8-HxCDD		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	40.6		4.79	U	4.75	U	4.47	U
1,2,3,7,8,9-HxCDD		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	20.5		4.79	U	4.75	U	4.47	U
1,2,3,4,6,7,8-HpCDD		pg/g	37.3		32.9		61.1		14.3		94.8		37		690		12.6		4.75	U	4.47	U
1,2,3,4,6,7,8,9-OCDD		pg/g	548		348		575		196		1660		911		5270	E	274		47.6		16.9	
2,3,7,8-TCDF		pg/g	0.906	U	0.931	U	0.933	U	0.914	U	0.947	U	0.944	U	0.953	U	0.958	U	0.949	U	0.893	U
1,2,3,7,8-PeCDF		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	4.77	U	4.79	U	4.75	U	4.47	U
2,3,4,7,8-PeCDF		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	4.77	U	4.79	U	4.75	U	4.47	U
1,2,3,4,7,8-HxCDF		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	4.77	U	4.79	U	4.75	U	4.47	U
1,2,3,6,7,8-HxCDF		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	4.77	U	4.79	U	4.75	U	4.47	U
2,3,4,6,7,8-HxCDF		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	4.77	U	4.79	U	4.75	U	4.47	U
1,2,3,7,8,9-HxCDF		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	4.77	U	4.79	U	4.75	U	4.47	U
1,2,3,4,6,7,8-HpCDF		pg/g	4.53	U	4.65	U	4.66	U	4.57	U	4.73	U	4.72	U	4.77	U	4.79	U	4.75	U	4.47	U
1,2,3,4,7,8,9-HpCDF		pg/g	4.53	U	4																	

**US WIND  
OFFSHORE ATLANTIC (DELAWARE)  
SEPTEMBER 2016 SEDIMENT SAMPLE RESULTS**

LOCATION		VC-A-01	VC-A-02	VC-A-03	VC-A-03-DUP	VC-A-04-S1	VC-A-04-S2	VC-A-04-S3	VC-A-05	VC-A-06-S1	VC-A-06-S2										
SAMPLING DATE		9/10/2016	9/10/2016	9/7/2016	9/7/2016	9/10/2016	9/10/2016	9/10/2016	9/10/2016	9/13/2016	9/13/2016										
LAB SAMPLE ID		L1629122-01	L1629122-02	L1629122-03	L1629122-04	L1629122-05	L1629122-06	L1629122-07	L1629122-08	L1629122-09	L1629122-10										
DE-SIRS-ESM Units		Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual										
<b>PCB Congeners</b>																					
1-MoCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
2-MoCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	3.31	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
3-MoCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
4-DiCB	pg/g	1.85	QU	1.82	QU	1.79	QU	1.89	QU	1.98	QU	1.88	QU	1.91	QU	1.85	QU	1.83	QU	1.82	QU
5-DiCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
6-DiCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
7-DiCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
8-DiCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
9-DiCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
10-DiCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
11-DiCB	pg/g	5.17	B	7.38	B	6	B	6.89	B	11.5	B	5.52	B	7.58	B	7.28	B	6.5	B	5.12	B
12-DiCB	pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.7	CU	3.66	CU	3.65	CU
13-DiCB	pg/g	-	C12	-	C12	-	C12	-	C12	-	C12	-	C12	-	C12	-	C12	-	C12	-	C12
14-DiCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
15-DiCB	pg/g	1.85	U	1.82	U	1.79	U	1.97	CU	3.81	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
16-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
17-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
18-TrCB	pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.7	CU	3.66	CU	3.65	CU
19-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
20-TrCB	pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	5.08	C	3.77	CU	3.82	CU	3.7	CU	3.66	CU	3.65	CU
21-TrCB	pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.7	CU	3.66	CU	3.65	CU
22-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
23-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
24-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
25-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
26-TrCB	pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.7	CU	3.66	CU	3.65	CU
27-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
28-TrCB	pg/g	-	C20	-	C20	-	C20	-	C20	-	C20	-	C20	-	C20	-	C20	-	C20	-	C20
29-TrCB	pg/g	-	C26	-	C26	-	C26	-	C26	-	C26	-	C26	-	C26	-	C26	-	C26	-	C26
30-TrCB	pg/g	-	C18	-	C18	-	C18	-	C18	-	C18	-	C18	-	C18	-	C18	-	C18	-	C18
31-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	3.09	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
32-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
33-TrCB	pg/g	-	C21	-	C21	-	C21	-	C21	-	C21	-	C21	-	C21	-	C21	-	C21	-	C21
34-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
35-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
36-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
37-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	2.3	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
38-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
39-TrCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
40-TeCB	pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.7	CU	3.66	CU	3.65	CU
41-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
42-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
43-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
44-TeCB	pg/g	5.54	CU	5.46	CU	5.36	CU	5.66	CU	5.94	CU	5.65	CU	5.73	CU	5.55	CU	5.49	CU	5.47	CU
45-TeCB	pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.7	CU	3.66	CU	3.65	CU
46-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
47-TeCB	pg/g	-	C44	-	C44	-	C44	-	C44	-	C44	-	C44	-	C44	-	C44	-	C44	-	C44
48-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
49-TeCB	pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.7	CU	3.66	CU	3.65	CU
50-TeCB	pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.7	CU	3.66	CU	3.65	CU
51-TeCB	pg/g	-	C45	-	C45	-	C45	-	C45	-	C45	-	C45	-	C45	-	C45	-	C45	-	C45
52-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	2.37	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
53-TeCB	pg/g	-	C50	-	C50	-	C50	-	C50	-	C50	-	C50	-	C50	-	C50	-	C50	-	C50
54-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
55-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
56-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
57-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
58-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U
59-TeCB	pg/g	5.54	CU	5.46	CU	5.36	CU	5.66	CU	5.94	CU	5.65	CU	5.73	CU	5.55	CU	5.49	CU	5.47	CU
60-TeCB	pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U	1.82	U

**US WIND  
OFFSHORE ATLANTIC (DELAWARE)  
SEPTEMBER 2016 SEDIMENT SAMPLE RESULTS**

LOCATION		VC-A-01	VC-A-02	VC-A-03	VC-A-03-DUP	VC-A-04-S1	VC-A-04-S2	VC-A-04-S3	VC-A-05	VC-A-06-S1	VC-A-06-S2	
SAMPLING DATE		9/10/2016	9/10/2016	9/7/2016	9/7/2016	9/10/2016	9/10/2016	9/10/2016	9/10/2016	9/13/2016	9/13/2016	
LAB SAMPLE ID		L1629122-01	L1629122-02	L1629122-03	L1629122-04	L1629122-05	L1629122-06	L1629122-07	L1629122-08	L1629122-09	L1629122-10	
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
61-TeCB		pg/g	7.39	CU	7.28	CU	7.14	CU	7.55	CU	7.92	CU
62-TeCB		pg/g	-	C59	-	C59	-	C59	-	C59	-	C59
63-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
64-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
65-TeCB		pg/g	-	C44	-	C44	-	C44	-	C44	-	C44
66-TeCB		pg/g	1.85	U	1.82	U	1.79	U	2.14	U	3.82	U
67-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
68-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
69-TeCB		pg/g	-	C49	-	C49	-	C49	-	C49	-	C49
70-TeCB		pg/g	-	C61	-	C61	-	C61	-	C61	-	C61
71-TeCB		pg/g	-	C40	-	C40	-	C40	-	C40	-	C40
72-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
73-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
74-TeCB		pg/g	-	C61	-	C61	-	C61	-	C61	-	C61
75-TeCB		pg/g	-	C59	-	C59	-	C59	-	C59	-	C59
76-TeCB		pg/g	-	C61	-	C61	-	C61	-	C61	-	C61
77-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
78-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
79-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
80-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
81-TeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
82-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
83-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
84-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
85-PeCB		pg/g	5.54	CU	5.46	CU	5.36	CU	5.66	CU	5.94	CU
86-PeCB		pg/g	11.1	CU	10.9	CU	10.7	CU	11.3	CU	11.9	CU
87-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86
88-PeCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
89-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
90-PeCB		pg/g	5.54	CU	5.46	CU	5.36	CU	3.77	CU	5.94	CU
91-PeCB		pg/g	-	C88	-	C88	-	C88	-	C88	-	C88
92-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
93-PeCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.96	CU	3.77	CU
94-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
95-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
96-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
97-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86
98-PeCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
99-PeCB		pg/g	1.85	U	1.82	U	1.79	U	2.0	U	2.26	U
100-PeCB		pg/g	-	C93	-	C93	-	C93	-	C93	-	C93
101-PeCB		pg/g	-	C90	-	C90	-	C90	-	C90	-	C90
102-PeCB		pg/g	-	C98	-	C98	-	C98	-	C98	-	C98
103-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
104-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
105-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
106-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
107-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
108-PeCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
109-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86
110-PeCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
111-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
112-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
113-PeCB		pg/g	-	C90	-	C90	-	C90	-	C90	-	C90
114-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
115-PeCB		pg/g	-	C110	-	C110	-	C110	-	C110	-	C110
116-PeCB		pg/g	-	C85	-	C85	-	C85	-	C85	-	C85
117-PeCB		pg/g	-	C85	-	C85	-	C85	-	C85	-	C85
118-PeCB		pg/g	1.85	U	1.82	U	1.79	U	2.15	U	3.29	U
119-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86
120-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
121-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U

**US WIND  
OFFSHORE ATLANTIC (DELAWARE)  
SEPTEMBER 2016 SEDIMENT SAMPLE RESULTS**

LOCATION		VC-A-01	VC-A-02	VC-A-03	VC-A-03-DUP	VC-A-04-S1	VC-A-04-S2	VC-A-04-S3	VC-A-05	VC-A-06-S1	VC-A-06-S2	
SAMPLING DATE		9/10/2016	9/10/2016	9/7/2016	9/7/2016	9/10/2016	9/10/2016	9/10/2016	9/10/2016	9/13/2016	9/13/2016	
LAB SAMPLE ID		L1629122-01	L1629122-02	L1629122-03	L1629122-04	L1629122-05	L1629122-06	L1629122-07	L1629122-08	L1629122-09	L1629122-10	
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
122-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
123-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
124-PeCB		pg/g	-	C108	-	C108	-	C108	-	C108	-	C108
125-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86
126-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
127-PeCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
128-HxCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
129-HxCB		pg/g	5.54	CU	5.46	CU	5.36	CU	5.66	CU	5.94	CU
130-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
131-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
132-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
133-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
134-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
135-HxCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
136-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
137-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
138-HxCB		pg/g	-	C129	-	C129	-	C129	-	C129	-	C129
139-HxCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
140-HxCB		pg/g	-	C139	-	C139	-	C139	-	C139	-	C139
141-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
142-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
143-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
144-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
145-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
146-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
147-HxCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
148-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
149-HxCB		pg/g	-	C147	-	C147	-	C147	-	C147	-	C147
150-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
151-HxCB		pg/g	-	C135	-	C135	-	C135	-	C135	-	C135
152-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
153-HxCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
154-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
155-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
156-HxCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
157-HxCB		pg/g	-	C156	-	C156	-	C156	-	C156	-	C156
158-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
159-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
160-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
161-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
162-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
163-HxCB		pg/g	-	C129	-	C129	-	C129	-	C129	-	C129
164-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
165-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
166-HxCB		pg/g	-	C128	-	C128	-	C128	-	C128	-	C128
167-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
168-HxCB		pg/g	-	C153	-	C153	-	C153	-	C153	-	C153
169-HxCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
170-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
171-HpCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
172-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
173-HpCB		pg/g	-	C171	-	C171	-	C171	-	C171	-	C171
174-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
175-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
176-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
177-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
178-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
179-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
180-HpCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU
181-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U
182-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U

**US WIND  
OFFSHORE ATLANTIC (DELAWARE)  
SEPTEMBER 2016 SEDIMENT SAMPLE RESULTS**

LOCATION		VC-A-01	VC-A-02	VC-A-03	VC-A-03-DUP	VC-A-04-S1	VC-A-04-S2	VC-A-04-S3	VC-A-05	VC-A-06-S1	VC-A-06-S2									
SAMPLING DATE		9/10/2016	9/10/2016	9/7/2016	9/7/2016	9/10/2016	9/10/2016	9/10/2016	9/10/2016	9/13/2016	9/13/2016									
LAB SAMPLE ID		L1629122-01	L1629122-02	L1629122-03	L1629122-04	L1629122-05	L1629122-06	L1629122-07	L1629122-08	L1629122-09	L1629122-10									
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual								
183-HpCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.96	CU	3.77	CU	3.82	CU	3.70	CU	3.66	CU	3.65	CU
184-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
185-HpCB		pg/g	-	C183	-	C183	-	C183	-	C183	-	C183	-	C183	-	C183	-	C183	1.82	C183
186-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
187-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	2.70	CU	1.88	U	1.91	U	1.85	U	1.83	U
188-HpCB		pg/g	1.85	U	1.82	U	1.86	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
189-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
190-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
191-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
192-HpCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
193-HpCB		pg/g	-	C180	-	C180	-	C180	-	C180	-	C180	-	C180	-	C180	-	C180	-	C180
194-OcCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
195-OcCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
196-OcCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
197-OcCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.70	CU	3.66	CU
198-OcCB		pg/g	3.7	CU	3.64	CU	3.57	CU	3.77	CU	3.96	CU	3.77	CU	3.82	CU	3.70	CU	3.66	CU
199-OcCB		pg/g	-	C198	-	C198	-	C198	-	C198	-	C198	-	C198	-	C198	-	C198	-	C198
200-OcCB		pg/g	-	C197	-	C197	-	C197	-	C197	-	C197	-	C197	-	C197	-	C197	-	C197
201-OcCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
202-OcCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
203-OcCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
204-OcCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
205-OcCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
206-NoCB		pg/g	1.85	U	2.76	U	3.9	U	2.33	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
207-NoCB		pg/g	1.85	U	1.82	U	1.79	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
208-NoCB		pg/g	1.85	U	1.82	U	2.38	U	1.89	U	1.98	U	1.88	U	1.91	U	1.85	U	1.83	U
209-DeCB		pg/g	1.85	U	4.53	U	6.24	U	4.05	U	2.59	U	1.88	U	1.91	U	1.85	U	1.93	U
Total PCB Congeners		pg/g	5.17	B	14.7	B	20.4	B	21.5	B	51.3	B	5.52	B	7.58	B	7.28	B	10.4	B

\*DE-SIRS-ESM: DNREC SIRS Ecological Marine Sediment Screening Levels Criteria per DNREC SIRS Screening Level Table - Updated July 2016.

U - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit(MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for TentativelyIdentified Compounds (TICs).

C - Congener has coeluters. When Cxxx, refer to congener number xxx for data.

B - The target analyte was detected in the associated blank.

Q - Quantitative Interference; value is estimated

Blue shading indicates congener included on NOAA PCB Congener List.

lbs/ft<sup>3</sup> - pounds per cubic foot; mg/kg - milligrams per kilogram; pg/g - picogram per gram

**US WIND  
INDIAN RIVER BAY  
OCTOBER 2017 SEDIMENT SAMPLE RESULTS**

LOCATION	VC-IRB-01	VC-IRB-02	VC-IRB-25*	VC-IRB-03-S1	VC-IRB-03-S2	VC-IRB-04	VC-IRB-05-S1	VC-IRB-05-S2	VC-IRB-06	VC-IRB-07-ALT-S1	VC-IRB-07-ALT-S2	VC-IRB-08-ALT-S1	VC-IRB-08-ALT-S2	VC-IRB-08-ALT-S3					
SAMPLING DATE	10/7/2017	10/7/2017	10/7/2017	10/7/2017	10/7/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/7/2017	10/7/2017	10/8/2017	10/8/2017	10/8/2017					
LAB SAMPLE ID	L1736278-01	L1736278-02	L1736278-18	L1736278-03	L1736278-04	L1736278-05	L1736278-06	L1736278-07	L1736278-08	L1736278-09	L1736278-10	L1736278-11	L1736278-12	L1736278-13					
SAMPLE TYPE																			
SAMPLE DEPTH (ft.)																			
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	
<b>Atterberg Limits</b>																			
Liquid Limit	-		52		70		-	-	40		62		57		60		90		89
Plastic Limit	-		42		56		-	-	30		50		49		48		93		77
Plasticity Index	-		10		14		-	-	10		12		8		12		NP	U	12
<b>Density of Soil</b>																			
Bulk Density		lbs/ft3	90.58		71.79		-	-	91.08		72.17		86.55		77.58		62.19		75.23
Moisture Content		%	113		161		-	-	71.6		176		94.1		135		578		173
Dry Density		lbs/ft3	42.61		27.5		-	-	53.09		26.1		44.59		33.03		9.179		27.52
<b>General Chemistry</b>																			
Solids, Total		%	43.6		33.9		37.3		60		32.6		45.5		41		13.9		32.9
Nitrogen, Ammonia		mg/kg	130		220		180		17		52		150		94		430		280
Phosphorus, Total		mg/kg	530		1100		450		300		550		780		700		740		830
Solids, Ash		%	94		90		-	-	96		83		92		93		43		88
Organic Matter, Total		%	6.1		9.8		-	-	3.7		17		8.2		6.6		57		11
% Soot (Rep 1)		%	0.05	U	0.108		0.607		0.062		0.05	U	0.05	U	0.097		1.36		0.05
% Soot (Rep 2)		%	0.05	U	0.1		0.597		0.065		0.05	U	0.05	U	0.09		1.41		0.05
Moisture		%	56.4		66.1		62.7		40		67.4		54.5		59		66.8		66
Specific Gravity		-	2.27		2.9		-	-	2.58		2.44		2.59		2.44		1.61		2.41
<b>Total Organic Carbon</b>																			
Total Organic Carbon (Rep1)		%	3.24		4.27		4.54		1.62		8.29		4.66		3.04		31.3		6.43
Total Organic Carbon (Rep2)		%	2.63		4.33		4.45		1.94		7.83		3.78		2.86		30.5		6.5
<b>Grain Size Analysis</b>																			
Cobbles		%	0.1	U	0.1	U	-	-	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1
% Coarse Gravel		%	0.1	U	0.1	U	-	-	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1
% Fine Gravel		%	1.1		21.7		-	-	1		0.6		0.1		0.8		14.3		0.3
% Total Gravel		%	1.1		21.7		-	-	1		0.6		0.1		0.8		14.3		0.3
% Coarse Sand		%	7.9		14.9		-	-	2.1		6.2		3.6		2.2		7.8		11.4
% Medium Sand		%	28		11		-	-	20.1		18		9.1		7.2		8.9		12.9
% Fine Sand		%	28.9		10		-	-	44.5		22.8		12.4		15.8		3.8		13.1
% Total Sand		%	64.8		35.9		-	-	66.7		47		25.1		32.6		34.9		33.8
% Silt Fine		%	32.9		35.3		-	-	28.6		45.1		65.5		57.6		49.1		52.6
% Clay Fine		%	1.2		7.1		-	-	3.7		7.3		9.4		9		1.7		13.3
% Total Fines		%	34.1		42.4		-	-	32.3		52.4		74.9		66.6		50.8		65.9
<b>Organochlorine Pesticides by GC</b>																			
alpha-BHC	1.36	mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Hexachlorobenzene		mg/kg	0.00088	U	0.00112	U	0.00101	U	0.000621	U	0.00118	U	0.000816	U	0.000892	U	0.00275	U	0.00112
beta-BHC		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
gamma-BHC		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
delta-BHC		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Heptachlor		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Aldrin		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Heptachlor epoxide (B)	0.0006	mg/kg	0.00088	U	0.00112	U	0.00101	U	0.000621	U	0.00118	U	0.000816	U	0.000892	U	0.00275	U	0.00112
Oxychlorane		mg/kg	0.00088	U	0.00112	U	0.00101	U	0.000621	U	0.00118	U	0.000816	U	0.000892	U	0.00275	U	0.00112
gamma-Chlordane		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
2,4'-DDE		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Endosulfan I	0.00107	mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
alpha-Chlordane		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
trans-Nonachlor		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
4,4'-DDE	0.00207	mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Dieldrin	0.00072	mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
2,4'-DDD		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Endrin	0.00267	mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.000645	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Endosulfan II	0.00107	mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
4,4'-DDD	0.00122	mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
2,4'-DDT		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
cis-Nonachlor		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Endrin aldehyde		mg/kg	0.00132	U	0.00167	U	0.00151	U	0.000932	U	0.00177	U	0.00122	U	0.00134	U	0.00413	U	0.00168
Endosulfan sulfate		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
4,4'-DDT	0.00119	mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Endrin ketone		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Methoxychlor	0.0296	mg/kg	0.0044	U	0.00558	U	0.00504	U	0.00311	U	0.0059	U	0.00408	U	0.00446	U	0.0138	U	0.0056
Mirex		mg/kg	0.00044	U	0.000558	U	0.000504	U	0.000311	U	0.00059	U	0.000408	U	0.000446	U	0.00138	U	0.00056
Toxaphene	0.536	mg/kg	0.0221	U	0.028	U	0.0253	U	0.0156	U	0.0296	U	0.0205	U	0.0224	U	0.0691	U	0.0281
Chlordane		mg/kg	0.0221	U	0.028	U	0.0253	U	0.0156	U	0.0296	U	0.0205	U	0.0224	U	0.0691	U	0.0281
<b>PAHs by GC/MS-SIM</b>																			
Naphthalene	0.0346	mg/kg	0.00459	J	0.00882	J	0.0104	J	0.00385	J	0.0117	J	0.00381	J	0.00592	J	0.0411	J	0.0106
Acenaphthylene		mg/kg	0.00853	U	0.00203	J	0.000847	J	0.00657	U	0.000924	J	0.0082	U	0.0095	J	0.00375	J	0.00455
Acenaphthene	0.00671	mg/kg	0.00126	J	0.00278	J	0.0021	J	0.00168	J	0.00249	J	0.00162	J	0.00138				

**US WIND  
INDIAN RIVER BAY  
OCTOBER 2017 SEDIMENT SAMPLE RESULTS**

LOCATION	VC-IRB-01	VC-IRB-02	VC-IRB-35*	VC-IRB-03-S1	VC-IRB-03-S2	VC-IRB-04	VC-IRB-05-S1	VC-IRB-05-S2	VC-IRB-06	VC-IRB-07-ALT-S1	VC-IRB-07-ALT-S2	VC-IRB-08-ALT-S1	VC-IRB-08-ALT-S2	VC-IRB-08-ALT-S3																
SAMPLING DATE	10/7/2017	10/7/2017	10/7/2017	10/7/2017	10/7/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/7/2017	10/7/2017	10/8/2017	10/8/2017	10/8/2017																
LAB SAMPLE ID	L1736278-01	L1736278-02	L1736278-18	L1736278-03	L1736278-04	L1736278-05	L1736278-06	L1736278-07	L1736278-08	L1736278-09	L1736278-10	L1736278-11	L1736278-12	L1736278-13																
SAMPLE TYPE																														
SAMPLE DEPTH (ft.)																														
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual												
<b>Total Metals</b>																														
Aluminum, Total		mg/kg	11100		19000		17100		6680		13400		13500		15900		7500		15300		10400		1780		12700		11500		2860	
Antimony, Total		mg/kg	0.102	J	0.142	J	0.148	J	0.063	J	0.082	J	0.072	J	0.148	J	0.274	J	0.139	J	0.157	J	0.402	U	0.198	J	2.28	U	0.382	U
Arsenic, Total	7.24	mg/kg	5.86		11.8		10.1		4.04		10.6		7.43		10.3		2.95		8.21		5.92		0.502		10.5		5.09		0.761	
Barium, Total		mg/kg	32		59.1		57.4		16.1		119		113		33.5		15.6		35.7		26.5		5.15		30.2		18.3		4.28	
Beryllium, Total		mg/kg	0.734		1.21		1.08		0.42		0.956		0.914		0.606		0.974		0.58		0.066	J	0.645		0.528		0.158			
Cadmium, Total	0.68	mg/kg	0.078	J	0.281		0.267		0.102		0.287		0.141		0.091	J	0.202		0.201		0.05	U	0.223		0.099	J	0.048		U	
Calcium, Total		mg/kg	1390		2590		2330		3740		1170		1520		2390		5950		2860		2440		75.7	J	2540		4880		162	
Chromium, Total	52.3	mg/kg	23.7		44.9		40.9		14.4		27.6		38.2		35.6		18		34.1		23.4		1.72		33.5		26.4		2.32	
Cobalt, Total		mg/kg	5.46		10.5		9.58		5.1		35.8		11.8		8.56		3.76		7.5		4.53		0.424		7.37		4.38		0.579	
Copper, Total	18.7	mg/kg	4.64		14.8		13.2		4.46		5.47		7.96		9.86		3.68		7.96		9.09		0.494	J	10.9		5.29		0.845	
Iron, Total		mg/kg	21200		28900		25400		11700		13500		19400		26100		17200		30500		19400		1440		20800		19600		2470	
Lead, Total	30.2	mg/kg	6.18		17.9		15.8		5.49		6.49		9.68		12.9		3.9		8.65		12.7		1.46		14.3		5.76		2.07	
Magnesium, Total		mg/kg	4080		8190		7290		2670		6300		3170		7460		7540		7150		4810		208		5970		5060		290	
Manganese, Total		mg/kg	107		273		243		75.5		162		231		203		64.1		171		135		10.5		197		85.4		15.8	
Mercury, Total	0.13	mg/kg	0.012	J	0.06		0.052		0.017	J	0.007	J	0.012	J	0.03	J	0.108	U	0.017	J	0.053		0.019	U	0.047		0.096	U	0.003	J
Nickel, Total	15.9	mg/kg	12.1		23.8		21.1		7.41		16.9		21.7		19		9.92		17.2		11.8		0.917		17.5		13.7		1.38	
Potassium, Total		mg/kg	1780		3400		3040		1170		1830		3250		2020		3090		1960		1960		90.5		2710		2230		129	
Selenium, Total		mg/kg	2.18		4.04		3.66		1.3		4.59		3.02		3.01		1.96	J	2.85		1.79		0.503	U	2.58		2.18	J	0.671	
Silver, Total	0.73	mg/kg	0.029	J	0.119	J	0.105	J	0.031	J	0.3	U	0.031	J	0.061	J	0.719	U	0.047	J	0.1	J	0.126	U	0.094	J	0.714	U	0.119	U
Sodium, Total		mg/kg	3130		5240		4770		2700		1820		1060		6090		13600		7720		5640		234		3030		10200		282	
Thallium, Total		mg/kg	0.101		0.211		0.172		0.078		0.367		0.175		0.162		0.098	J	0.163		0.117		0.018	J	0.175		0.105	J	0.028	J
Vanadium, Total		mg/kg	23.6		42.2		36.2		14		31.2		35.7		24.5		35.1		23.2		24.3		2.43		32.7		31.2		3.72	
Zinc, Total	124	mg/kg	35.6		90.8		79.5		27.7		53.3		59.5		62.9		14.2	J	51.2		50		2.53		65.8		23.7		4.45	
<b>Dioxins/Furans</b>																														
2,3,7,8-TCDD		pg/g	0.991	U	1.05	U	1.05	U	1	U	0.996	U	1.01	U	1	U	2.61	U	1.17	U	1.04	U	1	U	0.988	U	2.48	U	0.987	U
1,2,3,7,8-PeCDD		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,4,7,8-HxCDD		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,6,7,8-HxCDD		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,7,8,9-HxCDD		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	6.49		13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,4,6,7,8-HpCDD		pg/g	4.96	U	67.8		38.3		7.57		4.98	U	21		133		13	U	12.5		12.8		5	U	4.94	U	12.4	U	25.7	U
1,2,3,4,6,7,8,9-OCDD		pg/g	25.2		999		600		110		97		202		2480		64.2		188		224		45		1150		61		492	
2,3,7,8-TCDF		pg/g	0.991	U	1.15		1.05	U	1	U	0.996	U	1.01	U	1.4		2.61	U	1.17	U	1.04	U	1	U	0.988	U	2.48	U	0.987	U
1,2,3,7,8-PeCDF		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
2,3,4,7,8-PeCDF		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,4,7,8-HxCDF		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,6,7,8-HxCDF		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
2,3,4,6,7,8-HxCDF		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,7,8,9-HxCDF		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,4,6,7,8-HpCDF		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,4,7,8,9-HpCDF		pg/g	4.96	U	5.27	U	5.23	U	5	U	4.98	U	5.03	U	5	U	13	U	5.85	U	5.22	U	5	U	4.94	U	12.4	U	4.94	U
1,2,3,4,6,7,8,9-OCDF		pg/g	9.91	U	10.5	U	10.5	U	10	U	9.96	U	10.1	U	10	U	26.1	U	11.7	U	10.4	U	10	U	9.88	U	24.8	U	9.87	U
<b>PCB Congeners</b>																														
1-MoCB		pg/g	2.62	U	6.96		6.95		2.17	U	3.07	U	2.63	U	3.18	U	8.7	U	3.94		8.89		1.98	U	7.74		8.17	U	1.99	U
2-MoCB		pg/g	2.78		25.5		20.3		8.23		3.07	U	3.9		11		8.7	U	6.1		21.7		1.98	U	19.3		8.17	U	1.99	U
3-MoCB		pg/g	2.62	U	3.48	U	8.71		3.24		3.07	U	2.63	U	6.27		8.7	U	3.87	U	9.97		1.98	U	8.66		8.17	U	1.99	U
4-DiCB		pg/g	3.44		3.48	U	10.1		4.73		3.07	U	2.63	U	3.18	U	8.7	U	6.95		19.1		1.98	U	13.9		8.17	U	1.99	U
5-DiCB		pg/g	2.62	U	3.48	U	3.48																							



**US WIND  
INDIAN RIVER BAY  
OCTOBER 2017 SEDIMENT SAMPLE RESULTS**

LOCATION	VC-IRB-01	VC-IRB-02	VC-IRB-25*	VC-IRB-03-S1	VC-IRB-03-S2	VC-IRB-04	VC-IRB-05-S1	VC-IRB-05-S2	VC-IRB-06	VC-IRB-07-ALT-S1	VC-IRB-07-ALT-S2	VC-IRB-08-ALT-S1	VC-IRB-08-ALT-S2	VC-IRB-08-ALT-S3		
SAMPLING DATE	10/7/2017	10/7/2017	10/7/2017	10/7/2017	10/7/2017	10/6/2017	10/6/2017	10/6/2017	10/6/2017	10/7/2017	10/7/2017	10/8/2017	10/8/2017	10/8/2017		
LAB SAMPLE ID	L1736278-01	L1736278-02	L1736278-18	L1736278-03	L1736278-04	L1736278-05	L1736278-06	L1736278-07	L1736278-08	L1736278-09	L1736278-10	L1736278-11	L1736278-12	L1736278-13		
SAMPLE TYPE																
SAMPLE DEPTH (ft.)																
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
50-TeCB		pg/g	5.25	CU	6.96	CU	6.96	CU	4.34	CU	6.13	CU	5.27	CU	6.35	CU
51-TeCB		pg/g	-	C45	-	C45	-	C45	-	C45	-	C45	-	C45	-	C45
52-TeCB		pg/g	2.62	U	55.1	U	41.5	U	13.9	U	3.07	U	2.63	U	55.4	U
53-TeCB		pg/g	-	C50	-	C50	-	C50	-	C50	-	C50	-	C50	-	C50
54-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
55-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
56-TeCB		pg/g	2.62	U	42.1	U	29.9	U	10.7	U	3.07	U	2.63	U	26.5	U
57-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
58-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
59-TeCB		pg/g	7.87	CU	10.4	CU	10.4	CU	6.51	CU	5.27	CU	9.53	CU	26.1	CU
60-TeCB		pg/g	2.62	U	13.8	U	9.79	U	3.62	U	3.07	U	2.63	U	9.36	U
61-TeCB		pg/g	10.5	CU	139	C	111	C	37.1	C	12.3	CU	10.5	CU	102	C
62-TeCB		pg/g	-	C59	-	C59	-	C59	-	C59	-	C59	-	C59	-	C59
63-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
64-TeCB		pg/g	2.62	U	19.2	U	14.7	U	4.99	U	3.07	U	2.63	U	17.5	U
65-TeCB		pg/g	-	C44	-	C44	-	C44	-	C44	-	C44	-	C44	-	C44
66-TeCB		pg/g	2.62	U	124	U	89	U	32.9	U	3.07	U	2.63	U	81.2	U
67-TeCB		pg/g	2.62	U	3.52	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
68-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
69-TeCB		pg/g	-	C49	-	C49	-	C49	-	C49	-	C49	-	C49	-	C49
70-TeCB		pg/g	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61
71-TeCB		pg/g	-	C40	-	C40	-	C40	-	C40	-	C40	-	C40	-	C40
72-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
73-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
74-TeCB		pg/g	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61
75-TeCB		pg/g	-	C59	-	C59	-	C59	-	C59	-	C59	-	C59	-	C59
76-TeCB		pg/g	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61
77-TeCB		pg/g	2.62	U	32.4	U	24.3	U	7.28	U	3.07	U	2.63	U	13.7	U
78-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
79-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
80-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
81-TeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
82-PeCB		pg/g	2.62	U	3.48	U	4	U	2.17	U	3.07	U	2.63	U	5.7	U
83-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	4.1	U
84-PeCB		pg/g	2.62	U	13	U	10.7	U	3.24	U	3.07	U	2.63	U	17.8	U
85-PeCB		pg/g	7.87	CU	14.4	C	11.0	C	6.51	CU	9.2	CU	7.9	CU	12.7	C
86-PeCB		pg/g	15.7	CU	45.3	C	33.5	C	13	CU	18.4	CU	15.8	CU	47.2	C
87-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
88-PeCB		pg/g	5.25	CU	16.8	C	12.6	C	4.34	CU	6.13	CU	5.27	CU	17.4	C
89-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
90-PeCB		pg/g	7.87	CU	92.2	C	67.4	C	23.7	C	9.2	CU	7.9	CU	95.4	C
91-PeCB		pg/g	-	C88	-	C88	-	C88	-	C88	-	C88	-	C88	-	C88
92-PeCB		pg/g	2.62	U	13.7	U	11.7	U	4.01	U	3.07	U	2.63	U	15.6	U
93-PeCB		pg/g	5.25	CU	6.96	CU	6.96	CU	4.34	CU	6.13	CU	5.27	CU	6.35	CU
94-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
95-PeCB		pg/g	2.62	U	42.7	U	34.2	U	11.1	U	3.07	U	2.63	U	52.7	U
96-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
97-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
98-PeCB		pg/g	5.25	CU	6.96	CU	6.96	CU	4.34	CU	6.13	CU	5.27	CU	6.35	CU
99-PeCB		pg/g	2.62	U	96.8	U	62.5	U	25.9	U	3.07	U	2.63	U	96.4	U
100-PeCB		pg/g	-	C93	-	C93	-	C93	-	C93	-	C93	-	C93	-	C93
101-PeCB		pg/g	-	C90	-	C90	-	C90	-	C90	-	C90	-	C90	-	C90
102-PeCB		pg/g	-	C98	-	C98	-	C98	-	C98	-	C98	-	C98	-	C98
103-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
104-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
105-PeCB		pg/g	2.62	U	38.8	U	32.5	U	11.2	U	3.07	U	2.63	U	33.3	U
106-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
107-PeCB		pg/g	2.62	U	11.6	U	10.9	U	3.58	U	3.07	U	2.63	U	8.37	U
108-PeCB		pg/g	5.25	CU	6.96	CU	6.96	CU	4.34	CU	6.13	CU	5.27	CU	6.35	CU
109-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
110-PeCB		pg/g	5.25	CU	78.3	C	66.3	C	23.3	C	6.13	CU	5.27	CU	77.4	C
111-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
112-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
113-PeCB		pg/g	-	C90	-	C90	-	C90	-	C90	-	C90	-	C90	-	C90
114-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
115-PeCB		pg/g	-	C110	-	C110	-	C110	-	C110	-	C110	-	C110	-	C110
116-PeCB		pg/g	-	C85	-	C85	-	C85	-	C85	-	C85	-	C85	-	C85
117-PeCB		pg/g	-	C85	-	C85	-	C85	-	C85	-	C85	-	C85	-	C85
118-PeCB		pg/g	2.62	U	130	U	109	U	36.2	U	3.07	U	2.63	U	112	U
119-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
120-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
121-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
122-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
123-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
124-PeCB		pg/g	-	C108	-	C108	-	C108	-	C108	-	C108	-	C108	-	C108
125-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
126-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
127-PeCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
128-HxCB		pg/g	5.25	CU	18.9	C	15.2	C	5.24	C	6.13	CU	5.27	CU	15.9	C
129-HxCB		pg/g	7.87	CU	141	C	118	C	41.8	C	9.2	CU	7.9	CU	117	C
130-HxCB		pg/g	2.62	U	8.42	U	7.78	U	2.59	U	3.07	U	2.63	U	6.87	U
131-HxCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
132-HxCB		pg/g	2.62	U	22.7	U	18.2	U	2.17	U	3.07	U	2.63	U	21.5	U
133-HxCB		pg/g	2.62	U	4.34	U	3.62	U	2.17	U	3.07	U	2.63	U	3.18	U
134-HxCB		pg/g	2.62	U	4.91	U	4.05	U	2.17	U	3.07	U	2.63	U	5.23	U
135-HxCB		pg/g	5.25	CU	35.2	C	28.4	C	4.34	CU	6.13	CU	5.27	CU	31.6	C
136-HxCB		pg/g	2.62	U	12.3	U	8.66	U	3.46	U	3.07	U	2.63	U	12.8	U
137-HxCB		pg/g	2.62	U	3.48	U	3.48	U	2.17	U	3.07	U	2.63	U	3.18	U
138-HxCB		pg/g	-	C129	-	C129	-	C129	-	C129	-	C129	-	C129	-	C129
139-HxCB		pg/g	5.25	CU	6.96	CU	6.96	CU	4.34	CU	6.13	CU	5.27	CU	6.35	CU
140-HxCB																



**US WIND  
INDIAN RIVER BAY  
OCTOBER 2017 SEDIMENT SAMPLE RESULTS**

LOCATION	VC-IRB-09-ALT	VC-IRB-10	VC-IRB-12-S1	VC-IRB-12-S2	VC-IRB-14-ALT-S1	VC-IRB-14-ALT-S2	VC-IRB-15-ALT-S1	VC-IRB-15-ALT-S2	VC-IRB-11-ALT-S1	VC-IRB-11-ALT-S2	VC-IRB-24-S1	VC-IRB-24-S2	VC-IRB-13-ALT-S1	VC-IRB-13-ALT-S2				
SAMPLING DATE	10/8/2017	10/7/2017	10/6/2017	10/6/2017	10/9/2017	10/9/2017	10/9/2017	10/9/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017				
LAB SAMPLE ID	L1736278-14	L1736278-15	L1736278-16	L1736278-17	L1736485-01	L1736485-02	L1736485-03	L1736485-04	L1736603-01	L1736603-02	L1736603-03	L1736603-04	L1736603-05	L1736603-06				
SAMPLE TYPE																		
SAMPLE DEPTH (ft.)																		
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual		
<b>Atterberg Limits</b>																		
Liquid Limit	-		55		46		48		19		28		36		27		35	
Plastic Limit	-		50		43		41		20		22		23		26		29	
Plasticity Index	-		5		3		7		NP	U	5		5		1		6	
<b>Density of Soil</b>																		
Bulk Density		lbs/ft3	83.05		92.28		94.94		98.27		84.6		94.31		93.57		102.9	
Moisture Content		%	99		82.6		77.36		59.8		22.2		28.9		23.4		32.8	
Dry Density		lbs/ft3	41.74		50.55		77.36		61.5		73.17		73.17		75.83		77.48	
<b>General Chemistry</b>																		
Solids, Total		%	44.7		55		76.7		57.6		82.8		66.3		82.6		66.4	
Nitrogen, Ammonia		mg/kg	97		28		14		120	J	30		9	U	22		9.4	
Phosphorus, Total		mg/kg	300		460		450		460		110		290		61		280	
Solids, Ash		%	94		96		99		97		100		98		100		99	
Organic Matter, Total		%	6		3.8		0.61		3.3		0.34		2.1		0.47		2	
% Soot (Rep 1)		%	0.05	U	0.118		0.05	U	0.156		0.05	U	0.05	U	0.05	U	0.05	
% Soot (Rep 2)		%	0.05	U	0.103		0.05	U	0.191		0.05	U	0.05	U	0.05	U	0.05	
Moisture		%	53.8		45		21.8		42.4		17.2		32.6		17.4		33.6	
Specific Gravity		-	2.63		2.43		3.09		2.8		2.54		2.82		2.48		2.87	
<b>Total Organic Carbon</b>																		
Total Organic Carbon (Rep1)		%	2.82		1.74		0.181		1.22		0.051		0.645		0.087		0.659	
Total Organic Carbon (Rep2)		%	2.86		1.67		0.21		1.27		0.05	U	0.621		0.084		0.64	
<b>Grain Size Analysis</b>																		
Cobbles		%	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	
% Coarse Gravel		%	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	
% Fine Gravel		%	1.2		0.8		0.7		0.1	U	0.1	U	0.1	U	0.1	U	1.1	
% Total Gravel		%	1.2		0.8		0.7		0.1	U	0.1	U	0.1	U	0.1	U	1.1	
% Coarse Sand		%	5.7		5.1		0.1	U	2.5		0.1	U	0.1	U	0.1	U	8.8	
% Medium Sand		%	7.3		8.2		11		6.2		0.2		8.8		0.3		11.1	
% Fine Sand		%	20.7		27.3		66.3		26.9		93.4		47.4		91.1		48.3	
% Total Sand		%	33.7		40.6		77.3		35.6		93.6		56.2		91.4		59.4	
% Silt Fine		%	44.8		47.7		19.5		56.8		5.2		33.6		5.4		30.1	
% Clay Fine		%	20.3		10.9		2.5		7.6		1.2		10.2		3.2		10.5	
% Total Fines		%	65.1		58.6		22		64.4		6.4		43.8		8.6		40.6	
<b>Organochlorine Pesticides by GC</b>																		
alpha-BHC	1.36	mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Hexachlorobenzene		mg/kg	0.000869	U	0.000702	U	0.00049	U	0.000661	U	0.000819	U	0.000572	U	0.000885	U	0.000555	U
beta-BHC		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
gamma-BHC		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
delta-BHC		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Heptachlor		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Aldrin		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Heptachlor epoxide (B)	0.006	mg/kg	0.000869	U	0.000702	U	0.00049	U	0.000661	U	0.000819	U	0.000572	U	0.000885	U	0.000555	U
Oxychlorodane		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
gamma-Chlordane		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
2,4'-DDE		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Endosulfan I	0.000107	mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
alpha-Chlordane		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
trans-Nonachlor		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
4,4'-DDE	0.00207	mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Dieldrin	0.00072	mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
2,4'-DDD		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Endrin	0.00267	mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Endosulfan II	0.000107	mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
4,4'-DDD	0.00122	mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
2,4'-DDT		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
cis-Nonachlor		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Endrin aldehyde		mg/kg	0.0013	U	0.00105	U	0.000735	U	0.000991	U	0.00123	U	0.000859	U	0.00133	U	0.00132	U
Endosulfan sulfate		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
4,4'-DDT	0.00119	mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Endrin ketone		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Methoxychlor	0.0296	mg/kg	0.00434	U	0.00351	U	0.00245	U	0.0033	U	0.00409	U	0.00286	U	0.00443	U	0.00278	U
Mirex		mg/kg	0.000434	U	0.000351	U	0.000245	U	0.00033	U	0.000409	U	0.000286	U	0.000443	U	0.000278	U
Toxaphene	0.536	mg/kg	0.0218	U	0.0176	U	0.0123	U	0.0166	U	0.0206	U	0.0144	U	0.0222	U	0.0196	U
Chlordane		mg/kg	0.0218	U	0.0176	U	0.0123	U	0.0166	U	0.0206	U	0.0144	U	0.0222	U	0.0196	U
<b>PAHs by GC/MS-SIM</b>																		
Naphthalene	0.0346	mg/kg	0.00319	J	0.00299	J	0.00205	J	0.00493	J	0.00191	J	0.00113	J	0.00171	J	0.00121	J
Acenaphthylene		mg/kg	0.00877	U	0.00662	U	0.0049	U	0.00658	U	0.009	U	0.00862	U	0.00568	U	0.00874	U
Acenaphthene	0.00671	mg/kg	0.00877	U	0.00662	U	0.0049	U	0.00658	U	0.009	U	0.00862	U	0.00568	U	0.00874	U
Fluorene	0.0212	mg/kg	0.00186	J	0.00109	J	0.000366	J	0.00108	J	0.009	U	0.00586	U	0.00568	U	0.00194	J
Phenanthrene	0.0867	mg/kg	0.00304	J	0.00224	J	0.000783	J	0.00169	J	0.009	U	0.000723	J	0.00862	U	0.000718	J
Anthracene	0.0469	mg/kg	0.00877	U	0.00662	U	0.0049	U	0.00658	U	0.009	U	0.00862	U	0.00568	U	0.00874	U
Fluoranthene	0.113	mg/kg																

**US WIND  
INDIAN RIVER BAY  
OCTOBER 2017 SEDIMENT SAMPLE RESULTS**

LOCATION	VC-IRB-09-ALT	VC-IRB-10	VC-IRB-12-S1	VC-IRB-12-S2	VC-IRB-14-ALT-S1	VC-IRB-14-ALT-S2	VC-IRB-15-ALT-S1	VC-IRB-15-ALT-S2	VC-IRB-11-ALT-S1	VC-IRB-11-ALT-S2	VC-IRB-24-S1	VC-IRB-24-S2	VC-IRB-13-ALT-S1	VC-IRB-13-ALT-S2																
SAMPLING DATE	10/8/2017	10/7/2017	10/6/2017	10/6/2017	10/9/2017	10/9/2017	10/9/2017	10/9/2017	10/9/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017																
LAB SAMPLE ID	L1736278-14	L1736278-15	L1736278-16	L1736278-17	L1736485-01	L1736485-02	L1736485-03	L1736485-04	L1736603-01	L1736603-02	L1736603-03	L1736603-04	L1736603-05	L1736603-06																
SAMPLE TYPE																														
SAMPLE DEPTH (ft.)																														
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual								
<b>Total Metals</b>																														
Aluminum, Total		mg/kg	15700		11200		1400		11400		1780		8130		2190		7880		1780		13200		15700		16500		1160		8780	
Antimony, Total		mg/kg	0.129	J	0.158	J	0.411	U	0.191	J	0.369	U	0.054	J	0.074	J	0.071	J	0.041	J	0.078	J	0.16	J	0.094	J	0.399	U	0.045	J
Arsenic, Total	7.24	mg/kg	10.6		8.65		0.896		5.6		1.19		5.18		1.35		5.01		1.12		6.24		12		7.59		0.835		5.39	
Barium, Total		mg/kg	43.4		30.8		3.14		28.3		5.48		24.5		6.02		22.6		3.2		37.3		37.2		42.3		2.67		24.4	
Beryllium, Total		mg/kg	0.713		0.544		0.057	J	0.474		0.064	J	0.306		0.078		0.319		0.065	J	0.575		0.69		0.754		0.049	J	0.358	
Cadmium, Total	0.68	mg/kg	0.11		0.123		0.022	J	0.187		0.011	J	0.08		0.015	J	0.077		0.028	J	0.11		0.144		0.137		0.008	J	0.082	
Calcium, Total		mg/kg	2600		2220		474		2120		330		5470		346		1460		3290		2100		2500		2100		257		1850	
Chromium, Total	52.3	mg/kg	38.5		30		3.37		28		4.25		20.2		5.15		20.1		3.87		33.6		36.4		38.9		2.85		22.3	
Cobalt, Total		mg/kg	9.44		7.04		0.81		6.85		1.1		4.68		1.32		4.86		0.78		7.06		8.27		8.47		0.693		4.99	
Copper, Total	18.7	mg/kg	9.14		7.91		0.739		8.13		0.941		5.2		1.19		5.08		1.1		7.88		9.49		9.42		0.472	J	5.65	
Iron, Total		mg/kg	24500		17900		2010		15400		2420		14200		2910		14400		2360		22500		28200		29300		1560		16100	
Lead, Total	30.2	mg/kg	8.3		8.56		0.956		6.88		1.32		4.2		1.28		4.33		1.52		7.71		9.59		9.53		1.31		4.92	
Magnesium, Total		mg/kg	6960		6260		764		5560		901		4840		1070		4490		790		6220		7820		7100		549		5000	
Manganese, Total		mg/kg	202		188		18.6		164		21.2		119		26.3		120		19.1		184		202		163		14.7		124	
Mercury, Total	0.13	mg/kg	0.009	J	0.007	J	0.017	U	0.006	J	0.016	U	0.019	U	0.018	U	0.021	U	0.017	U	0.027	U	0.005	J	0.037	U	0.015	U	0.02	U
Nickel, Total	15.9	mg/kg	22		17		1.86		16.3		2.37		11.2		2.93		11.3		2		18.2		20.2		22.2		1.44		12.3	
Potassium, Total		mg/kg	3460		2720		336		2390		343		1860		414		1810		359		3050		3240		3560		208		1940	
Selenium, Total		mg/kg	2.98		2.18		0.287	J	2.18		0.958		3.56		1.01		3.63		0.674		6.13		7.1		6.84		0.777		3.99	
Silver, Total	0.73	mg/kg	0.034	J	0.038	J	0.128	U	0.027	J	0.115	U	0.017	J	0.119	U	0.017	J	0.123	U	0.027	J	0.042	J	0.032	J	0.125	U	0.02	J
Sodium, Total		mg/kg	6630		4040		2110		3780		2550		8100		2560		6950		2140		8440		8600		12600		1810		7460	
Thallium, Total		mg/kg	0.143		0.153		0.02	J	0.161		0.025	J	0.106		0.026	J	0.102		0.024	J	0.143		0.159		0.153		0.017	J	0.109	
Vanadium, Total		mg/kg	38.8		30.7		3.44		30.3		4.12		20.4		4.88		19.7		4.18		34.5		42.9		38.2		2.94		21.7	
Zinc, Total	124	mg/kg	57.6		46.6		4.8		41.6		6.36		33.1		7.53		33.2		6.11		51.7		60.8		62.1		4.01		35.8	
<b>Dioxins/Furans</b>																														
2,3,7,8-TCDD		pg/g	1.02	U	0.996	U	0.997	U	1	U	0.997	U	0.999	U	0.983	U	0.998	U	0.991	U	0.998	U	0.997	U	1.11	U	0.979	U	1.00	U
1,2,3,7,8-PeCDD		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
1,2,3,4,7,8-HxCDD		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
1,2,3,6,7,8-HxCDD		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
1,2,3,4,6,7,8-HpCDD		pg/g	24.2	U	33.1		5.07		23.2		4.98	U	6.15		5.15		4.99	U	7.27		15.3		44.5		6.72		4.89	U	42.5	U
1,2,3,4,6,7,8,9-OCDD		pg/g	379		553		79.9		347		48.2		78.7		85.5		64.9		109		197		763		81.5		20.9		613	
2,3,7,8-TCDF		pg/g	1.02	U	0.996	U	0.997	U	1	U	0.997	U	0.999	U	0.983	U	0.998	U	0.991	U	0.998	U	0.997	U	1.11	U	0.979	U	1.00	U
1,2,3,7,8-PeCDF		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
2,3,4,7,8-PeCDF		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
1,2,3,4,7,8-HxCDF		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
1,2,3,6,7,8-HxCDF		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
2,3,4,6,7,8-HxCDF		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
1,2,3,4,6,7,8,9-HpCDF		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
1,2,3,4,7,8,9-HpCDF		pg/g	5.1	U	4.98	U	4.99	U	5	U	4.98	U	5	U	4.92	U	4.99	U	4.96	U	4.99	U	4.98	U	5.55	U	4.89	U	5.00	U
1,2,3,4,6,7,8,9-OCDF		pg/g	10.2	U	9.96	U	9.97	U	10	U	9.97	U	9.99	U	9.83	U	9.98	U	9.91	U	9.98	U	9.97	U	11.1	U	9.79	U	10.00	U
<b>PCB Congeners</b>																														
1-MoCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U	2.0	U	1.99	U	2.76	U	2.43	U	3.69	U	2.0	U	1.99	U
2-MoCB		pg/g	2.68	U	2.33	U	1.98	U	2.99	U	2.0	U	2.77	U	1.99	U	2.0	U	1.99	U	3.58	U	5.62	U	3.69	U	2.0	U	3.47	U
3-MoCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U	2.0	U	1.99	U	3.69	U	2.43	U	3.69	U	2.0	U	1.99	U
4-DiCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U	2.0	U	1.99	U	2.76	U	2.43	U	3.69	U	2.0	U	1.99	U
5-DiCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U	2.0	U	1.99	U	2.76	U	2.43	U	3.69	U	2.0	U	1.99	U
6-DiCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U	2.0	U	1.99</											

**US WIND  
INDIAN RIVER BAY  
OCTOBER 2017 SEDIMENT SAMPLE RESULTS**

LOCATION	VC-IRB-09-ALT	VC-IRB-10	VC-IRB-12-S1	VC-IRB-12-S2	VC-IRB-14-ALT-S1	VC-IRB-14-ALT-S2	VC-IRB-15-ALT-S1	VC-IRB-15-ALT-S2	VC-IRB-11-ALT-S1	VC-IRB-11-ALT-S2	VC-IRB-24-S1	VC-IRB-24-S2	VC-IRB-13-ALT-S1	VC-IRB-13-ALT-S2		
SAMPLING DATE	10/8/2017	10/7/2017	10/6/2017	10/6/2017	10/9/2017	10/9/2017	10/9/2017	10/9/2017	10/9/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017	10/10/2017		
LAB SAMPLE ID	L1736278-14	L1736278-15	L1736278-16	L1736278-17	L1736485-01	L1736485-02	L1736485-03	L1736485-04	L1736603-01	L1736603-02	L1736603-03	L1736603-04	L1736603-05	L1736603-06		
SAMPLE TYPE																
SAMPLE DEPTH (ft.)																
	DE-SIRS-ESM	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
50-TeCB		pg/g	5.36	CU	4.66	CU	3.96	CU	4.24	CU	4.0	CU	3.99	CU	3.97	CU
51-TeCB		pg/g	-	C45	-	C45	-	C45	-	C45	-	C45	-	C45	-	C45
52-TeCB		pg/g	3.22	U	6.69	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
53-TeCB		pg/g	-	C50	-	C50	-	C50	-	C50	-	C50	-	C50	-	C50
54-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
55-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
56-TeCB		pg/g	2.68	U	4.41	U	1.98	U	2.12	U	2.0	U	2.0	U	2.41	U
57-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
58-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
59-TeCB		pg/g	8.04	CU	6.99	CU	5.94	CU	6.36	CU	6.0	CU	5.99	CU	5.96	CU
60-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
61-TeCB		pg/g	10.7	CU	15.3	C	7.93	CU	8.0	CU	7.98	CU	7.95	CU	4.0	CU
62-TeCB		pg/g	-	C59	-	C59	-	C59	-	C59	-	C59	-	C59	-	C59
63-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
64-TeCB		pg/g	2.68	U	2.64	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
65-TeCB		pg/g	-	C44	-	C44	-	C44	-	C44	-	C44	-	C44	-	C44
66-TeCB		pg/g	2.68	U	12.2	U	2.75	U	2.12	U	2.0	U	2.0	U	1.99	U
67-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
68-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
69-TeCB		pg/g	-	C49	-	C49	-	C49	-	C49	-	C49	-	C49	-	C49
70-TeCB		pg/g	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61
71-TeCB		pg/g	-	C40	-	C40	-	C40	-	C40	-	C40	-	C40	-	C40
72-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
73-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
74-TeCB		pg/g	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61
75-TeCB		pg/g	-	C59	-	C59	-	C59	-	C59	-	C59	-	C59	-	C59
76-TeCB		pg/g	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61	-	C61
77-TeCB		pg/g	2.68	U	2.35	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
78-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
79-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
80-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
81-TeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
82-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
83-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
84-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
85-PeCB		pg/g	8.04	CU	6.99	CU	5.94	CU	6.36	CU	6.0	CU	5.99	CU	5.96	CU
86-PeCB		pg/g	16.1	CU	14	CU	11.9	CU	12.7	CU	12.0	CU	12	CU	11.9	CU
87-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
88-PeCB		pg/g	5.36	CU	4.66	CU	4.24	CU	4.0	CU	3.99	CU	4.0	CU	3.99	CU
89-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
90-PeCB		pg/g	8.04	CU	9.05	C	3.96	CU	6.36	CU	6.0	CU	5.99	CU	5.96	CU
91-PeCB		pg/g	-	C88	-	C88	-	C88	-	C88	-	C88	-	C88	-	C88
92-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
93-PeCB		pg/g	5.36	CU	4.66	CU	3.96	CU	4.24	CU	4.0	CU	3.99	CU	3.97	CU
94-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
95-PeCB		pg/g	2.68	U	4.51	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
96-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
97-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
98-PeCB		pg/g	5.36	CU	4.66	CU	3.96	CU	4.24	CU	4.0	CU	3.99	CU	4.0	CU
99-PeCB		pg/g	2.68	U	7.78	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
100-PeCB		pg/g	-	C93	-	C93	-	C93	-	C93	-	C93	-	C93	-	C93
101-PeCB		pg/g	-	C90	-	C90	-	C90	-	C90	-	C90	-	C90	-	C90
102-PeCB		pg/g	-	C98	-	C98	-	C98	-	C98	-	C98	-	C98	-	C98
103-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
104-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
105-PeCB		pg/g	2.68	U	3.79	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
106-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
107-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
108-PeCB		pg/g	5.36	CU	4.66	CU	3.96	CU	4.24	CU	4.0	CU	3.99	CU	3.97	CU
109-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
110-PeCB		pg/g	5.36	CU	9.07	C	3.96	CU	4.24	CU	4.0	CU	3.99	CU	4.0	CU
111-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
112-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
113-PeCB		pg/g	-	C90	-	C90	-	C90	-	C90	-	C90	-	C90	-	C90
114-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
115-PeCB		pg/g	-	C110	-	C110	-	C110	-	C110	-	C110	-	C110	-	C110
116-PeCB		pg/g	-	C85	-	C85	-	C85	-	C85	-	C85	-	C85	-	C85
117-PeCB		pg/g	-	C85	-	C85	-	C85	-	C85	-	C85	-	C85	-	C85
118-PeCB		pg/g	2.75	U	12	U	2.54	U	2.12	U	2.0	U	2.0	U	1.99	U
119-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
120-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
121-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
122-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
123-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
124-PeCB		pg/g	-	C108	-	C108	-	C108	-	C108	-	C108	-	C108	-	C108
125-PeCB		pg/g	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86	-	C86
126-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
127-PeCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
128-HxCB		pg/g	5.36	CU	4.66	CU	3.96	CU	4.24	CU	4.0	CU	3.99	CU	3.97	CU
129-HxCB		pg/g	8.04	CU	15.7	C	5.94	CU	6.36	CU	6.0	CU	5.99	CU	5.96	CU
130-HxCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
131-HxCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
132-HxCB		pg/g	2.68	U	2.66	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
133-HxCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
134-HxCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
135-HxCB		pg/g	5.36	CU	5.26	C	3.96	CU	4.24	CU	4.0	CU	3.99	CU	3.97	CU
136-HxCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
137-HxCB		pg/g	2.68	U	2.33	U	1.98	U	2.12	U	2.0	U	2.0	U	1.99	U
138-HxCB		pg/g	-	C129	-	C129	-	C129	-	C129	-	C129	-	C129	-	C129
139-HxCB		pg/g	5.36	CU	4.66	CU	3.96	CU	4.24	CU	4.0	CU	3.99	CU	3.97	CU
140-HxCB		pg/g	-	C139	-	C139	-	C139	-	C						



**Appendix E**

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**Laboratory Reports**



## ANALYTICAL REPORT

Lab Number:	L1629122
Client:	ESS Group, Inc. 100 Fifth Avenue 5th Floor Waltham, MA 02451
ATTN:	Michael Phillips
Phone:	(781) 419-7718
Project Name:	US WIND
Project Number:	4167-022
Report Date:	10/18/16

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Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), ME (MA00030), PA (68-02089), VA (460194), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), USFWS (Permit #LE2069641), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)





**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1629122-01	VC-A-01	SEDIMENT	DELAWARE	09/10/16 09:00	09/15/16
L1629122-02	VC-A-02	SEDIMENT	DELAWARE	09/10/16 08:30	09/15/16
L1629122-03	VC-A-03	SEDIMENT	DELAWARE	09/07/16 19:30	09/15/16
L1629122-04	VC-A-03-DUP	SEDIMENT	DELAWARE	09/07/16 19:30	09/15/16
L1629122-05	VC-A-04-S1	SEDIMENT	DELAWARE	09/10/16 12:00	09/15/16
L1629122-06	VC-A-04-S2	SEDIMENT	DELAWARE	09/10/16 12:15	09/15/16
L1629122-07	VC-A-04-S3	SEDIMENT	DELAWARE	09/10/16 12:30	09/15/16
L1629122-08	VC-A-05	SEDIMENT	DELAWARE	09/10/16 13:30	09/15/16
L1629122-09	VC-A-06-S1	SEDIMENT	DELAWARE	09/13/16 10:00	09/15/16
L1629122-10	VC-A-06-S2	SEDIMENT	DELAWARE	09/13/16 10:15	09/15/16

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

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**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

### Case Narrative (continued)

#### Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

#### Sample Receipt

Per client request the following sample ID's were revised:

A-03 to VC-A-03, A-03-DUP to VC-A-03-DUP, A-03-MS to VC-A-03-MS, and A-03-MSD to VC-A-03-MSD.

#### PAHs by SIM

The WG934341-2/-3 LCS/LCSD recoveries are outside the acceptance criteria for Naphthalene (60%/55%), Acenaphthylene (65% LCSD only), Acenaphthene (69%/62%), Fluorene (68% LCSD only), Anthracene (68% LCSD Only), 2-Methylnaphthalene (67%/65%) and 2-Chloronaphthalene (62%/60%).

The WG934341-4/-5 MS/MSD recoveries, performed on L1629122-04, are outside the acceptance criteria for Naphthalene (62%/64%) and 2-Chloronaphthalene (69% MS only).

#### Metals

L1629122-01, -03, -04, -09, and -10: The samples have elevated detection limits due to the dilution required by the sample matrix.

The WG939139-3 Laboratory Duplicate RPD, performed on L1629122-04, is outside the acceptance criteria for Barium (25%). The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

The WG939139-4/-5 MS/MSD recoveries, performed on L1629122-04, are outside the acceptance criteria for Aluminum (342%/400%), Calcium (127% MSD only), Sodium (136% MSD only), and Iron (160%/149%); however, the associated LCS recoveries are within overall method allowances. No further action was required.

The WG939140-4/-5 MS/MSD recoveries, performed on L1629122-04, are outside the acceptance criteria for Mercury (124%/125%); however, the associated LCS recovery is within criteria. No further action was taken.

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

### Case Narrative (continued)

#### Solids, Ash

L1629122-01 through -03, and -05 through -08 was analyzed with the method required holding time exceeded.

#### Organic Matter, Total

L1629122-01 through -03, and -05 through -08 was analyzed with the method required holding time exceeded.

#### % SOOT

L1629122-09: The Sample Replicate RPD is outside the acceptance criteria of 30%. A double-burn re-analysis was performed with confirming results. The results of the original analysis are reported. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

The WG938749-5 MSD RPD % Soot (Rep 2) (52%), performed on L1629122-04, is above the acceptance criteria.

#### Atterberg Limits

The WG939078-1 Laboratory Duplicate RPD, performed on L1629122-01, is outside the acceptance criteria for Plastic Limit (38%). The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

#### Total Organic Carbon

L1629122 - Samples were frozen upon receipt to arrest sample holding time.

L1629122-06: The Sample Replicate RPD is outside the acceptance criteria of 30%. A double-burn re-analysis was performed with confirming results. The results of the original analysis are reported. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

#### Grain Size Analysis

The WG939154-1 Laboratory Duplicate RPDs, performed on L1629122-01, is outside the acceptance criteria

**Project Name:** US WIND  
**Project Number:** 4167-022

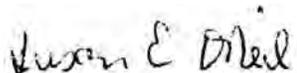
**Lab Number:** L1629122  
**Report Date:** 10/18/16

**Case Narrative (continued)**

for % Coarse Sand (40%) and % Clay Fine (29%). The elevated RPDs have been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Susan O'Neil

Title: Technical Director/Representative

Date: 10/18/16

# ORGANICS

# SEMIVOLATILES

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-01  
 Client ID: VC-A-01  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 10/12/16 05:25  
 Analyst: DP  
 Percent Solids: 83%

Date Collected: 09/10/16 09:00  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	0.00191	J	mg/kg	0.00452	0.00040	1
Acenaphthylene	ND		mg/kg	0.00452	0.00030	1
Acenaphthene	ND		mg/kg	0.00452	0.00050	1
Fluorene	ND		mg/kg	0.00452	0.00030	1
Phenanthrene	0.00060	J	mg/kg	0.00452	0.00053	1
Anthracene	ND		mg/kg	0.00452	0.00056	1
Fluoranthene	ND		mg/kg	0.00452	0.00082	1
Pyrene	ND		mg/kg	0.00452	0.00046	1
Benzo(a)anthracene	ND		mg/kg	0.00452	0.00121	1
Chrysene	ND		mg/kg	0.00452	0.00039	1
Benzo(b)fluoranthene	ND		mg/kg	0.00452	0.00047	1
Benzo(k)fluoranthene	ND		mg/kg	0.00452	0.00046	1
Benzo(a)pyrene	0.00279	J	mg/kg	0.00452	0.00053	1
Indeno(1,2,3-cd)pyrene	0.00334	J	mg/kg	0.00452	0.00129	1
Dibenz(a,h)anthracene	0.00233	J	mg/kg	0.00452	0.00046	1
Benzo(g,h,i)perylene	0.00203	J	mg/kg	0.00452	0.00037	1
2-Methylnaphthalene	0.00084	J	mg/kg	0.00452	0.00056	1
2-Chloronaphthalene	ND		mg/kg	0.00452	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	67		30-130
Pyrene-d10	86		30-130
Benzo(b)fluoranthene-d12	116		30-130



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-02  
 Client ID: VC-A-02  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 10/12/16 05:59  
 Analyst: DP  
 Percent Solids: 84%

Date Collected: 09/10/16 08:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	0.00157	J	mg/kg	0.00474	0.00042	1
Acenaphthylene	ND		mg/kg	0.00474	0.00031	1
Acenaphthene	ND		mg/kg	0.00474	0.00053	1
Fluorene	ND		mg/kg	0.00474	0.00031	1
Phenanthrene	ND		mg/kg	0.00474	0.00056	1
Anthracene	ND		mg/kg	0.00474	0.00058	1
Fluoranthene	ND		mg/kg	0.00474	0.00086	1
Pyrene	ND		mg/kg	0.00474	0.00048	1
Benzo(a)anthracene	ND		mg/kg	0.00474	0.00127	1
Chrysene	ND		mg/kg	0.00474	0.00041	1
Benzo(b)fluoranthene	ND		mg/kg	0.00474	0.00049	1
Benzo(k)fluoranthene	ND		mg/kg	0.00474	0.00048	1
Benzo(a)pyrene	0.00298	J	mg/kg	0.00474	0.00055	1
Indeno(1,2,3-cd)pyrene	0.00344	J	mg/kg	0.00474	0.00135	1
Dibenz(a,h)anthracene	0.00240	J	mg/kg	0.00474	0.00048	1
Benzo(g,h,i)perylene	0.00214	J	mg/kg	0.00474	0.00039	1
2-Methylnaphthalene	0.00059	J	mg/kg	0.00474	0.00058	1
2-Chloronaphthalene	ND		mg/kg	0.00474	0.00037	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	57		30-130
Pyrene-d10	74		30-130
Benzo(b)fluoranthene-d12	94		30-130

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-03  
**Client ID:** VC-A-03  
**Sample Location:** DELAWARE  
**Matrix:** Sediment  
**Analytical Method:** 1,8270D-SIM  
**Analytical Date:** 10/12/16 06:31  
**Analyst:** DP  
**Percent Solids:** 86%

**Date Collected:** 09/07/16 19:30  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3570  
**Extraction Date:** 09/21/16 16:04  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Naphthalene	0.00177	J	mg/kg	0.00437	0.00039	1
Acenaphthylene	ND		mg/kg	0.00437	0.00029	1
Acenaphthene	ND		mg/kg	0.00437	0.00049	1
Fluorene	ND		mg/kg	0.00437	0.00029	1
Phenanthrene	0.00056	J	mg/kg	0.00437	0.00051	1
Anthracene	ND		mg/kg	0.00437	0.00054	1
Fluoranthene	ND		mg/kg	0.00437	0.00080	1
Pyrene	ND		mg/kg	0.00437	0.00044	1
Benzo(a)anthracene	ND		mg/kg	0.00437	0.00117	1
Chrysene	ND		mg/kg	0.00437	0.00038	1
Benzo(b)fluoranthene	ND		mg/kg	0.00437	0.00045	1
Benzo(k)fluoranthene	ND		mg/kg	0.00437	0.00045	1
Benzo(a)pyrene	0.00263	J	mg/kg	0.00437	0.00051	1
Indeno(1,2,3-cd)pyrene	0.00297	J	mg/kg	0.00437	0.00125	1
Dibenz(a,h)anthracene	ND		mg/kg	0.00437	0.00045	1
Benzo(g,h,i)perylene	0.00183	J	mg/kg	0.00437	0.00036	1
2-Methylnaphthalene	0.00062	J	mg/kg	0.00437	0.00054	1
2-Chloronaphthalene	ND		mg/kg	0.00437	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	65		30-130
Pyrene-d10	88		30-130
Benzo(b)fluoranthene-d12	108		30-130

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-04  
 Client ID: VC-A-03-DUP  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 10/12/16 07:05  
 Analyst: DP  
 Percent Solids: 87%

Date Collected: 09/07/16 19:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	0.00160	J	mg/kg	0.00444	0.00039	1
Acenaphthylene	ND		mg/kg	0.00444	0.00029	1
Acenaphthene	0.00085	J	mg/kg	0.00444	0.00049	1
Fluorene	ND		mg/kg	0.00444	0.00029	1
Phenanthrene	ND		mg/kg	0.00444	0.00052	1
Anthracene	ND		mg/kg	0.00444	0.00055	1
Fluoranthene	ND		mg/kg	0.00444	0.00081	1
Pyrene	ND		mg/kg	0.00444	0.00045	1
Benzo(a)anthracene	ND		mg/kg	0.00444	0.00118	1
Chrysene	ND		mg/kg	0.00444	0.00039	1
Benzo(b)fluoranthene	ND		mg/kg	0.00444	0.00046	1
Benzo(k)fluoranthene	ND		mg/kg	0.00444	0.00045	1
Benzo(a)pyrene	0.00263	J	mg/kg	0.00444	0.00051	1
Indeno(1,2,3-cd)pyrene	0.00298	J	mg/kg	0.00444	0.00126	1
Dibenz(a,h)anthracene	ND		mg/kg	0.00444	0.00045	1
Benzo(g,h,i)perylene	0.00184	J	mg/kg	0.00444	0.00036	1
2-Methylnaphthalene	0.00066	J	mg/kg	0.00444	0.00055	1
2-Chloronaphthalene	ND		mg/kg	0.00444	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	59		30-130
Pyrene-d10	74		30-130
Benzo(b)fluoranthene-d12	89		30-130

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-05  
**Client ID:** VC-A-04-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment  
**Analytical Method:** 1,8270D-SIM  
**Analytical Date:** 10/12/16 08:46  
**Analyst:** DP  
**Percent Solids:** 67%

**Date Collected:** 09/10/16 12:00  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3570  
**Extraction Date:** 09/21/16 16:04  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Naphthalene	0.00416	J	mg/kg	0.00564	0.00050	1
Acenaphthylene	0.00073	J	mg/kg	0.00564	0.00037	1
Acenaphthene	0.00095	J	mg/kg	0.00564	0.00063	1
Fluorene	0.00184	J	mg/kg	0.00564	0.00037	1
Phenanthrene	0.00404	J	mg/kg	0.00564	0.00066	1
Anthracene	0.00113	J	mg/kg	0.00564	0.00069	1
Fluoranthene	0.00310	J	mg/kg	0.00564	0.00103	1
Pyrene	0.00178	J	mg/kg	0.00564	0.00057	1
Benzo(a)anthracene	ND		mg/kg	0.00564	0.00150	1
Chrysene	0.00191	J	mg/kg	0.00564	0.00049	1
Benzo(b)fluoranthene	ND		mg/kg	0.00564	0.00058	1
Benzo(k)fluoranthene	ND		mg/kg	0.00564	0.00058	1
Benzo(a)pyrene	0.00384	J	mg/kg	0.00564	0.00066	1
Indeno(1,2,3-cd)pyrene	0.00531	J	mg/kg	0.00564	0.00161	1
Dibenz(a,h)anthracene	0.00309	J	mg/kg	0.00564	0.00058	1
Benzo(g,h,i)perylene	0.00383	J	mg/kg	0.00564	0.00046	1
2-Methylnaphthalene	0.00214	J	mg/kg	0.00564	0.00069	1
2-Chloronaphthalene	0.00074	J	mg/kg	0.00564	0.00044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	64		30-130
Pyrene-d10	92		30-130
Benzo(b)fluoranthene-d12	105		30-130

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-06  
 Client ID: VC-A-04-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 10/12/16 09:20  
 Analyst: DP  
 Percent Solids: 79%

Date Collected: 09/10/16 12:15  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	0.00191	J	mg/kg	0.00501	0.00044	1
Acenaphthylene	0.00035	J	mg/kg	0.00501	0.00033	1
Acenaphthene	ND		mg/kg	0.00501	0.00056	1
Fluorene	0.00053	J	mg/kg	0.00501	0.00033	1
Phenanthrene	0.00116	J	mg/kg	0.00501	0.00059	1
Anthracene	ND		mg/kg	0.00501	0.00062	1
Fluoranthene	ND		mg/kg	0.00501	0.00091	1
Pyrene	0.00054	J	mg/kg	0.00501	0.00051	1
Benz(a)anthracene	ND		mg/kg	0.00501	0.00134	1
Chrysene	0.00054	J	mg/kg	0.00501	0.00044	1
Benzo(b)fluoranthene	0.00079	J	mg/kg	0.00501	0.00052	1
Benzo(k)fluoranthene	ND		mg/kg	0.00501	0.00051	1
Benzo(a)pyrene	0.00313	J	mg/kg	0.00501	0.00058	1
Indeno(1,2,3-cd)pyrene	0.00377	J	mg/kg	0.00501	0.00143	1
Dibenz(a,h)anthracene	0.00257	J	mg/kg	0.00501	0.00051	1
Benzo(g,h,i)perylene	0.00245	J	mg/kg	0.00501	0.00041	1
2-Methylnaphthalene	0.00081	J	mg/kg	0.00501	0.00062	1
2-Chloronaphthalene	ND		mg/kg	0.00501	0.00039	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	64		30-130
Pyrene-d10	88		30-130
Benzo(b)fluoranthene-d12	102		30-130

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-07  
 Client ID: VC-A-04-S3  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 10/12/16 09:54  
 Analyst: DP  
 Percent Solids: 73%

Date Collected: 09/10/16 12:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	0.00171	J	mg/kg	0.00544	0.00048	1
Acenaphthylene	0.00037	J	mg/kg	0.00544	0.00036	1
Acenaphthene	ND		mg/kg	0.00544	0.00060	1
Fluorene	ND		mg/kg	0.00544	0.00036	1
Phenanthrene	0.00072	J	mg/kg	0.00544	0.00064	1
Anthracene	ND		mg/kg	0.00544	0.00067	1
Fluoranthene	ND		mg/kg	0.00544	0.00099	1
Pyrene	ND		mg/kg	0.00544	0.00055	1
Benz(a)anthracene	ND		mg/kg	0.00544	0.00145	1
Chrysene	0.00049	J	mg/kg	0.00544	0.00047	1
Benzo(b)fluoranthene	ND		mg/kg	0.00544	0.00056	1
Benzo(k)fluoranthene	ND		mg/kg	0.00544	0.00056	1
Benzo(a)pyrene	0.00333	J	mg/kg	0.00544	0.00063	1
Indeno(1,2,3-cd)pyrene	0.00387	J	mg/kg	0.00544	0.00155	1
Dibenz(a,h)anthracene	0.00269	J	mg/kg	0.00544	0.00056	1
Benzo(g,h,i)perylene	0.00251	J	mg/kg	0.00544	0.00044	1
2-Methylnaphthalene	0.00075	J	mg/kg	0.00544	0.00067	1
2-Chloronaphthalene	ND		mg/kg	0.00544	0.00042	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	58		30-130
Pyrene-d10	90		30-130
Benzo(b)fluoranthene-d12	109		30-130

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-08  
 Client ID: VC-A-05  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 10/12/16 10:29  
 Analyst: DP  
 Percent Solids: 86%

Date Collected: 09/10/16 13:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	0.00138	J	mg/kg	0.00438	0.00039	1
Acenaphthylene	0.00114	J	mg/kg	0.00438	0.00029	1
Acenaphthene	ND		mg/kg	0.00438	0.00049	1
Fluorene	ND		mg/kg	0.00438	0.00029	1
Phenanthrene	ND		mg/kg	0.00438	0.00051	1
Anthracene	ND		mg/kg	0.00438	0.00054	1
Fluoranthene	ND		mg/kg	0.00438	0.00080	1
Pyrene	ND		mg/kg	0.00438	0.00044	1
Benzo(a)anthracene	ND		mg/kg	0.00438	0.00117	1
Chrysene	ND		mg/kg	0.00438	0.00038	1
Benzo(b)fluoranthene	ND		mg/kg	0.00438	0.00045	1
Benzo(k)fluoranthene	ND		mg/kg	0.00438	0.00045	1
Benzo(a)pyrene	0.00262	J	mg/kg	0.00438	0.00051	1
Indeno(1,2,3-cd)pyrene	0.00314	J	mg/kg	0.00438	0.00125	1
Dibenz(a,h)anthracene	ND		mg/kg	0.00438	0.00045	1
Benzo(g,h,i)perylene	0.00190	J	mg/kg	0.00438	0.00036	1
2-Methylnaphthalene	ND		mg/kg	0.00438	0.00054	1
2-Chloronaphthalene	ND		mg/kg	0.00438	0.00034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	54		30-130
Pyrene-d10	78		30-130
Benzo(b)fluoranthene-d12	106		30-130

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-09  
 Client ID: VC-A-06-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 10/12/16 11:05  
 Analyst: DP  
 Percent Solids: 86%

Date Collected: 09/13/16 10:00  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	0.00142	J	mg/kg	0.00449	0.00040	1
Acenaphthylene	ND		mg/kg	0.00449	0.00030	1
Acenaphthene	ND		mg/kg	0.00449	0.00050	1
Fluorene	ND		mg/kg	0.00449	0.00030	1
Phenanthrene	0.00077	J	mg/kg	0.00449	0.00053	1
Anthracene	ND		mg/kg	0.00449	0.00055	1
Fluoranthene	ND		mg/kg	0.00449	0.00082	1
Pyrene	ND		mg/kg	0.00449	0.00045	1
Benzo(a)anthracene	ND		mg/kg	0.00449	0.00120	1
Chrysene	ND		mg/kg	0.00449	0.00039	1
Benzo(b)fluoranthene	ND		mg/kg	0.00449	0.00046	1
Benzo(k)fluoranthene	ND		mg/kg	0.00449	0.00046	1
Benzo(a)pyrene	0.00288	J	mg/kg	0.00449	0.00052	1
Indeno(1,2,3-cd)pyrene	0.00334	J	mg/kg	0.00449	0.00128	1
Dibenz(a,h)anthracene	0.00226	J	mg/kg	0.00449	0.00046	1
Benzo(g,h,i)perylene	0.00208	J	mg/kg	0.00449	0.00037	1
2-Methylnaphthalene	ND		mg/kg	0.00449	0.00055	1
2-Chloronaphthalene	ND		mg/kg	0.00449	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	57		30-130
Pyrene-d10	84		30-130
Benzo(b)fluoranthene-d12	114		30-130



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-10  
 Client ID: VC-A-06-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 10/12/16 11:40  
 Analyst: DP  
 Percent Solids: 86%

Date Collected: 09/13/16 10:15  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	0.00297	J	mg/kg	0.00458	0.00041	1
Acenaphthylene	ND		mg/kg	0.00458	0.00030	1
Acenaphthene	ND		mg/kg	0.00458	0.00051	1
Fluorene	0.00037	J	mg/kg	0.00458	0.00030	1
Phenanthrene	0.00078	J	mg/kg	0.00458	0.00054	1
Anthracene	ND		mg/kg	0.00458	0.00056	1
Fluoranthene	ND		mg/kg	0.00458	0.00083	1
Pyrene	ND		mg/kg	0.00458	0.00046	1
Benzo(a)anthracene	ND		mg/kg	0.00458	0.00122	1
Chrysene	ND		mg/kg	0.00458	0.00040	1
Benzo(b)fluoranthene	ND		mg/kg	0.00458	0.00047	1
Benzo(k)fluoranthene	ND		mg/kg	0.00458	0.00047	1
Benzo(a)pyrene	0.00269	J	mg/kg	0.00458	0.00053	1
Indeno(1,2,3-cd)pyrene	0.00305	J	mg/kg	0.00458	0.00130	1
Dibenz(a,h)anthracene	ND		mg/kg	0.00458	0.00047	1
Benzo(g,h,i)perylene	0.00185	J	mg/kg	0.00458	0.00037	1
2-Methylnaphthalene	0.00125	J	mg/kg	0.00458	0.00056	1
2-Chloronaphthalene	ND		mg/kg	0.00458	0.00035	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	56		30-130
Pyrene-d10	89		30-130
Benzo(b)fluoranthene-d12	113		30-130

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8270D-SIM  
**Analytical Date:** 10/12/16 03:45  
**Analyst:** DP

**Extraction Method:** EPA 3570  
**Extraction Date:** 09/21/16 16:04  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 10/05/16

Parameter	Result	Qualifier	Units	RL	MDL
PAHs by GC/MS-SIM - Mansfield Lab for sample(s): 01-10 Batch: WG934341-1					
Naphthalene	0.00125	J	mg/kg	0.00400	0.00035
Acenaphthylene	ND		mg/kg	0.00400	0.00026
Acenaphthene	ND		mg/kg	0.00400	0.00044
Fluorene	ND		mg/kg	0.00400	0.00026
Phenanthrene	ND		mg/kg	0.00400	0.00047
Anthracene	ND		mg/kg	0.00400	0.00049
Fluoranthene	ND		mg/kg	0.00400	0.00073
Pyrene	ND		mg/kg	0.00400	0.00040
Benz(a)anthracene	ND		mg/kg	0.00400	0.00107
Chrysene	ND		mg/kg	0.00400	0.00035
Benzo(b)fluoranthene	ND		mg/kg	0.00400	0.00041
Benzo(k)fluoranthene	ND		mg/kg	0.00400	0.00041
Benzo(a)pyrene	ND		mg/kg	0.00400	0.00046
Indeno(1,2,3-cd)pyrene	ND		mg/kg	0.00400	0.00114
Dibenz(a,h)anthracene	ND		mg/kg	0.00400	0.00041
Benzo(g,h,i)perylene	ND		mg/kg	0.00400	0.00033
2-Methylnaphthalene	ND		mg/kg	0.00400	0.00049
2-Chloronaphthalene	ND		mg/kg	0.00400	0.00031

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	58		30-130
Pyrene-d10	85		30-130
Benzo(b)fluoranthene-d12	112		30-130



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-10 Batch: WG934341-2 WG934341-3								
Naphthalene	60	Q	55	Q	70-130	9		30
Acenaphthylene	70		65	Q	70-130	7		30
Acenaphthene	69	Q	62	Q	70-130	11		30
Fluorene	75		68	Q	70-130	10		30
Phenanthrene	83		71		70-130	16		30
Anthracene	86		68	Q	70-130	23		30
Fluoranthene	96		80		70-130	18		30
Pyrene	86		70		70-130	21		30
Benz(a)anthracene	106		87		70-130	20		30
Chrysene	93		77		70-130	19		30
Benzo(b)fluoranthene	109		109		70-130	0		30
Benzo(k)fluoranthene	104		98		70-130	6		30
Benzo(a)pyrene	94		80		70-130	16		30
Indeno(1,2,3-cd)Pyrene	98		99		70-130	1		30
Dibenz(a,h)anthracene	92		87		70-130	6		30
Benzo(ghi)perylene	95		85		70-130	11		30
2-Methylnaphthalene	67	Q	65	Q	70-130	3		30
2-Chloronaphthalene	62	Q	60	Q	70-130	3		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-10 Batch: WG934341-2 WG934341-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Methylnaphthalene-d10	63		59		30-130
Pyrene-d10	95		78		30-130
Benzo(b)fluoranthene-d12	112		104		30-130

## Matrix Spike Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG934341-4 WG934341-5 QC Sample: L1629122-04 Client ID: VC-A-03-DUP												
Naphthalene	0.00160J	0.547	0.339	62	Q	0.368	64	Q	70-130	8		30
Acenaphthylene	ND	0.547	0.405	74		0.413	72		70-130	2		30
Acenaphthene	0.00085J	0.547	0.384	70		0.429	75		70-130	11		30
Fluorene	ND	0.547	0.429	78		0.462	81		70-130	7		30
Phenanthrene	ND	0.547	0.437	80		0.474	83		70-130	8		30
Anthracene	ND	0.547	0.441	81		0.461	80		70-130	4		30
Fluoranthene	ND	0.547	0.504	92		0.509	89		70-130	1		30
Pyrene	ND	0.547	0.441	81		0.455	79		70-130	3		30
Benz(a)anthracene	ND	0.547	0.536	98		0.537	94		70-130	0		30
Chrysene	ND	0.547	0.463	85		0.499	87		70-130	7		30
Benzo(b)fluoranthene	ND	0.547	0.593	108		0.612	107		70-130	3		30
Benzo(k)fluoranthene	ND	0.547	0.574	105		0.589	103		70-130	3		30
Benzo(a)pyrene	0.00263J	0.547	0.477	87		0.495	86		70-130	4		30
Indeno(1,2,3-cd)Pyrene	0.00298J	0.547	0.550	101		0.545	95		70-130	1		30
Dibenz(a,h)anthracene	ND	0.547	0.491	90		0.528	92		70-130	7		30
Benzo(ghi)perylene	0.00184J	0.547	0.492	90		0.542	95		70-130	10		30
2-Methylnaphthalene	0.00066J	0.547	0.392	72		0.426	74		70-130	8		30
2-Chloronaphthalene	ND	0.547	0.379	69	Q	0.413	72		70-130	9		30

## Matrix Spike Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
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PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG934341-4 WG934341-5 QC Sample: L1629122-04 Client ID: VC-A-03-DUP

<i>Surrogate</i>	<i>MS</i>		<i>MSD</i>		<i>Acceptance Criteria</i>
	<i>% Recovery</i>	<i>Qualifier</i>	<i>% Recovery</i>	<i>Qualifier</i>	
2-Methylnaphthalene-d10	65		68		30-130
Benzo(b)fluoranthene-d12	111		109		30-130
Pyrene-d10	91		85		30-130

# PESTICIDES

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-01  
 Client ID: VC-A-01  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 17:30  
 Analyst: DP  
 Percent Solids: 83%

Date Collected: 09/10/16 09:00  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
4,4'-DDD	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDE	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDT	ND		mg/kg	0.00003	0.00003	1	A
Aldrin	ND		mg/kg	0.00003	0.00003	1	A
alpha-BHC	ND		mg/kg	0.00003	0.00003	1	A
alpha-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
beta-BHC	ND		mg/kg	0.00003	0.00003	1	A
delta-BHC	ND		mg/kg	0.00003	0.00003	1	A
Dieldrin	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan I	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan II	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan sulfate	ND		mg/kg	0.00003	0.00003	1	A
Endrin	ND		mg/kg	0.00003	0.00003	1	A
Endrin aldehyde	ND		mg/kg	0.00011	0.00011	1	A
Endrin ketone	ND		mg/kg	0.00003	0.00003	1	A
gamma-BHC	0.00015		mg/kg	0.00003	0.00003	1	B
gamma-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00007	0.00007	1	B
Methoxychlor	ND		mg/kg	0.00039	0.00039	1	A
Toxaphene	ND		mg/kg	0.00198	0.00198	1	A
Chlordane	ND		mg/kg	0.00198	0.00198	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	58		30-150	A
DCB - Surrogate	47		30-150	A
TMX - Surrogate	59		30-150	B
DCB - Surrogate	46		30-150	B



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-02  
 Client ID: VC-A-02  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 18:04  
 Analyst: DP  
 Percent Solids: 84%

Date Collected: 09/10/16 08:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
4,4'-DDD	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDE	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDT	ND		mg/kg	0.00003	0.00003	1	A
Aldrin	ND		mg/kg	0.00003	0.00003	1	A
alpha-BHC	ND		mg/kg	0.00003	0.00003	1	A
alpha-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
beta-BHC	ND		mg/kg	0.00003	0.00003	1	A
delta-BHC	ND		mg/kg	0.00003	0.00003	1	A
Dieldrin	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan I	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan II	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan sulfate	ND		mg/kg	0.00003	0.00003	1	A
Endrin	ND		mg/kg	0.00003	0.00003	1	A
Endrin aldehyde	ND		mg/kg	0.00011	0.00011	1	A
Endrin ketone	ND		mg/kg	0.00003	0.00003	1	A
gamma-BHC	ND		mg/kg	0.00003	0.00003	1	A
gamma-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00007	0.00007	1	B
Methoxychlor	ND		mg/kg	0.00039	0.00039	1	A
Toxaphene	ND		mg/kg	0.00199	0.00199	1	A
Chlordane	ND		mg/kg	0.00199	0.00199	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	54		30-150	A
DCB - Surrogate	52		30-150	A
TMX - Surrogate	55		30-150	B
DCB - Surrogate	52		30-150	B

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-03  
 Client ID: VC-A-03  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 18:38  
 Analyst: DP  
 Percent Solids: 86%

Date Collected: 09/07/16 19:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
4,4'-DDD	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDE	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDT	ND		mg/kg	0.00003	0.00003	1	A
Aldrin	ND		mg/kg	0.00003	0.00003	1	A
alpha-BHC	ND		mg/kg	0.00003	0.00003	1	A
alpha-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
beta-BHC	ND		mg/kg	0.00003	0.00003	1	A
delta-BHC	ND		mg/kg	0.00003	0.00003	1	A
Dieldrin	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan I	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan II	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan sulfate	ND		mg/kg	0.00003	0.00003	1	A
Endrin	ND		mg/kg	0.00003	0.00003	1	A
Endrin aldehyde	ND		mg/kg	0.00011	0.00011	1	A
Endrin ketone	ND		mg/kg	0.00003	0.00003	1	A
gamma-BHC	ND		mg/kg	0.00003	0.00003	1	A
gamma-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00007	0.00007	1	B
Methoxychlor	ND		mg/kg	0.00037	0.00037	1	A
Toxaphene	ND		mg/kg	0.00190	0.00190	1	A
Chlordane	ND		mg/kg	0.00190	0.00190	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	52		30-150	A
DCB - Surrogate	53		30-150	A
TMX - Surrogate	52		30-150	B
DCB - Surrogate	52		30-150	B

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-04  
 Client ID: VC-A-03-DUP  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 19:12  
 Analyst: DP  
 Percent Solids: 87%

Date Collected: 09/07/16 19:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
4,4'-DDD	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDE	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDT	ND		mg/kg	0.00003	0.00003	1	A
Aldrin	ND		mg/kg	0.00003	0.00003	1	A
alpha-BHC	ND		mg/kg	0.00003	0.00003	1	A
alpha-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
beta-BHC	ND		mg/kg	0.00003	0.00003	1	A
delta-BHC	ND		mg/kg	0.00003	0.00003	1	A
Dieldrin	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan I	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan II	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan sulfate	ND		mg/kg	0.00003	0.00003	1	A
Endrin	ND		mg/kg	0.00003	0.00003	1	A
Endrin aldehyde	ND		mg/kg	0.00011	0.00011	1	A
Endrin ketone	ND		mg/kg	0.00003	0.00003	1	A
gamma-BHC	ND		mg/kg	0.00003	0.00003	1	A
gamma-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00007	0.00007	1	B
Methoxychlor	ND		mg/kg	0.00038	0.00038	1	A
Toxaphene	ND		mg/kg	0.00192	0.00192	1	A
Chlordane	ND		mg/kg	0.00192	0.00192	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	65		30-150	A
DCB - Surrogate	56		30-150	A
TMX - Surrogate	69		30-150	B
DCB - Surrogate	58		30-150	B

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-05  
 Client ID: VC-A-04-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 20:54  
 Analyst: DP  
 Percent Solids: 67%

Date Collected: 09/10/16 12:00  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
4,4'-DDD	ND		mg/kg	0.00004	0.00004	1	A
4,4'-DDE	ND		mg/kg	0.00004	0.00004	1	A
4,4'-DDT	ND		mg/kg	0.00004	0.00004	1	A
Aldrin	ND		mg/kg	0.00004	0.00004	1	A
alpha-BHC	ND		mg/kg	0.00004	0.00004	1	A
alpha-Chlordane	ND		mg/kg	0.00004	0.00004	1	A
beta-BHC	ND		mg/kg	0.00004	0.00004	1	A
delta-BHC	ND		mg/kg	0.00004	0.00004	1	A
Dieldrin	ND		mg/kg	0.00004	0.00004	1	A
Endosulfan I	ND		mg/kg	0.00004	0.00004	1	A
Endosulfan II	ND		mg/kg	0.00004	0.00004	1	A
Endosulfan sulfate	ND		mg/kg	0.00004	0.00004	1	A
Endrin	ND		mg/kg	0.00004	0.00004	1	A
Endrin aldehyde	ND		mg/kg	0.00014	0.00014	1	A
Endrin ketone	ND		mg/kg	0.00004	0.00004	1	A
gamma-BHC	ND		mg/kg	0.00004	0.00004	1	A
gamma-Chlordane	ND		mg/kg	0.00004	0.00004	1	A
Heptachlor	ND		mg/kg	0.00004	0.00004	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00009	0.00009	1	B
Methoxychlor	ND		mg/kg	0.00048	0.00048	1	A
Toxaphene	ND		mg/kg	0.00243	0.00243	1	A
Chlordane	ND		mg/kg	0.00243	0.00243	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	65		30-150	A
DCB - Surrogate	55		30-150	A
TMX - Surrogate	59		30-150	B
DCB - Surrogate	51		30-150	B

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-06  
 Client ID: VC-A-04-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 21:28  
 Analyst: DP  
 Percent Solids: 79%

Date Collected: 09/10/16 12:15  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
4,4'-DDD	ND		mg/kg	0.00004	0.00004	1	A
4,4'-DDE	ND		mg/kg	0.00004	0.00004	1	A
4,4'-DDT	ND		mg/kg	0.00004	0.00004	1	A
Aldrin	ND		mg/kg	0.00004	0.00004	1	A
alpha-BHC	ND		mg/kg	0.00004	0.00004	1	A
alpha-Chlordane	ND		mg/kg	0.00004	0.00004	1	A
beta-BHC	ND		mg/kg	0.00004	0.00004	1	A
delta-BHC	ND		mg/kg	0.00004	0.00004	1	A
Dieldrin	ND		mg/kg	0.00004	0.00004	1	A
Endosulfan I	ND		mg/kg	0.00004	0.00004	1	A
Endosulfan II	ND		mg/kg	0.00004	0.00004	1	A
Endosulfan sulfate	ND		mg/kg	0.00004	0.00004	1	A
Endrin	ND		mg/kg	0.00004	0.00004	1	A
Endrin aldehyde	ND		mg/kg	0.00012	0.00012	1	A
Endrin ketone	ND		mg/kg	0.00004	0.00004	1	A
gamma-BHC	ND		mg/kg	0.00004	0.00004	1	A
gamma-Chlordane	ND		mg/kg	0.00004	0.00004	1	A
Heptachlor	ND		mg/kg	0.00004	0.00004	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00008	0.00008	1	B
Methoxychlor	ND		mg/kg	0.00041	0.00041	1	A
Toxaphene	ND		mg/kg	0.00207	0.00207	1	A
Chlordane	ND		mg/kg	0.00207	0.00207	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	57		30-150	A
DCB - Surrogate	55		30-150	A
TMX - Surrogate	56		30-150	B
DCB - Surrogate	53		30-150	B

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-07  
 Client ID: VC-A-04-S3  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 22:02  
 Analyst: DP  
 Percent Solids: 73%

Date Collected: 09/10/16 12:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
4,4'-DDD	ND		mg/kg	0.00004	0.00004	1	A
4,4'-DDE	ND		mg/kg	0.00004	0.00004	1	A
4,4'-DDT	ND		mg/kg	0.00004	0.00004	1	A
Aldrin	ND		mg/kg	0.00004	0.00004	1	A
alpha-BHC	ND		mg/kg	0.00004	0.00004	1	A
alpha-Chlordane	ND		mg/kg	0.00004	0.00004	1	A
beta-BHC	ND		mg/kg	0.00004	0.00004	1	A
delta-BHC	ND		mg/kg	0.00004	0.00004	1	A
Dieldrin	ND		mg/kg	0.00004	0.00004	1	A
Endosulfan I	ND		mg/kg	0.00004	0.00004	1	A
Endosulfan II	ND		mg/kg	0.00004	0.00004	1	A
Endosulfan sulfate	ND		mg/kg	0.00004	0.00004	1	A
Endrin	ND		mg/kg	0.00004	0.00004	1	A
Endrin aldehyde	ND		mg/kg	0.00013	0.00013	1	A
Endrin ketone	ND		mg/kg	0.00004	0.00004	1	A
gamma-BHC	ND		mg/kg	0.00004	0.00004	1	A
gamma-Chlordane	ND		mg/kg	0.00004	0.00004	1	A
Heptachlor	ND		mg/kg	0.00004	0.00004	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00009	0.00009	1	B
Methoxychlor	ND		mg/kg	0.00045	0.00045	1	A
Toxaphene	ND		mg/kg	0.00229	0.00229	1	A
Chlordane	ND		mg/kg	0.00229	0.00229	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	68		30-150	A
DCB - Surrogate	57		30-150	A
TMX - Surrogate	65		30-150	B
DCB - Surrogate	57		30-150	B

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-08  
 Client ID: VC-A-05  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 22:36  
 Analyst: DP  
 Percent Solids: 86%

Date Collected: 09/10/16 13:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
4,4'-DDD	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDE	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDT	ND		mg/kg	0.00003	0.00003	1	A
Aldrin	ND		mg/kg	0.00003	0.00003	1	A
alpha-BHC	ND		mg/kg	0.00003	0.00003	1	A
alpha-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
beta-BHC	ND		mg/kg	0.00003	0.00003	1	A
delta-BHC	ND		mg/kg	0.00003	0.00003	1	A
Dieldrin	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan I	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan II	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan sulfate	ND		mg/kg	0.00003	0.00003	1	A
Endrin	ND		mg/kg	0.00003	0.00003	1	A
Endrin aldehyde	ND		mg/kg	0.00011	0.00011	1	A
Endrin ketone	ND		mg/kg	0.00003	0.00003	1	A
gamma-BHC	ND		mg/kg	0.00003	0.00003	1	A
gamma-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00007	0.00007	1	B
Methoxychlor	ND		mg/kg	0.00038	0.00038	1	A
Toxaphene	ND		mg/kg	0.00194	0.00194	1	A
Chlordane	ND		mg/kg	0.00194	0.00194	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	65		30-150	A
DCB - Surrogate	47		30-150	A
TMX - Surrogate	69		30-150	B
DCB - Surrogate	52		30-150	B

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-09  
 Client ID: VC-A-06-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 23:10  
 Analyst: DP  
 Percent Solids: 86%

Date Collected: 09/13/16 10:00  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
4,4'-DDD	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDE	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDT	ND		mg/kg	0.00003	0.00003	1	A
Aldrin	ND		mg/kg	0.00003	0.00003	1	A
alpha-BHC	ND		mg/kg	0.00003	0.00003	1	A
alpha-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
beta-BHC	ND		mg/kg	0.00003	0.00003	1	A
delta-BHC	ND		mg/kg	0.00003	0.00003	1	A
Dieldrin	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan I	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan II	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan sulfate	ND		mg/kg	0.00003	0.00003	1	A
Endrin	ND		mg/kg	0.00003	0.00003	1	A
Endrin aldehyde	ND		mg/kg	0.00011	0.00011	1	A
Endrin ketone	ND		mg/kg	0.00003	0.00003	1	A
gamma-BHC	ND		mg/kg	0.00003	0.00003	1	A
gamma-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00007	0.00007	1	B
Methoxychlor	ND		mg/kg	0.00038	0.00038	1	A
Toxaphene	ND		mg/kg	0.00193	0.00193	1	A
Chlordane	ND		mg/kg	0.00193	0.00193	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	47		30-150	A
DCB - Surrogate	48		30-150	A
TMX - Surrogate	50		30-150	B
DCB - Surrogate	49		30-150	B



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-10  
 Client ID: VC-A-06-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 23:43  
 Analyst: DP  
 Percent Solids: 86%

Date Collected: 09/13/16 10:15  
 Date Received: 09/15/16  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
4,4'-DDD	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDE	ND		mg/kg	0.00003	0.00003	1	A
4,4'-DDT	ND		mg/kg	0.00003	0.00003	1	A
Aldrin	ND		mg/kg	0.00003	0.00003	1	A
alpha-BHC	ND		mg/kg	0.00003	0.00003	1	A
alpha-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
beta-BHC	ND		mg/kg	0.00003	0.00003	1	A
delta-BHC	ND		mg/kg	0.00003	0.00003	1	A
Dieldrin	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan I	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan II	ND		mg/kg	0.00003	0.00003	1	A
Endosulfan sulfate	ND		mg/kg	0.00003	0.00003	1	A
Endrin	ND		mg/kg	0.00003	0.00003	1	A
Endrin aldehyde	ND		mg/kg	0.00011	0.00011	1	A
Endrin ketone	ND		mg/kg	0.00003	0.00003	1	A
gamma-BHC	ND		mg/kg	0.00003	0.00003	1	A
gamma-Chlordane	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor	ND		mg/kg	0.00003	0.00003	1	A
Heptachlor epoxide (B)	ND		mg/kg	0.00007	0.00007	1	B
Methoxychlor	ND		mg/kg	0.00038	0.00038	1	A
Toxaphene	ND		mg/kg	0.00191	0.00191	1	A
Chlordane	ND		mg/kg	0.00191	0.00191	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	35		30-150	A
DCB - Surrogate	38		30-150	A
TMX - Surrogate	35		30-150	B
DCB - Surrogate	37		30-150	B

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8081B  
**Analytical Date:** 10/01/16 15:48  
**Analyst:** DP

**Extraction Method:** EPA 3570  
**Extraction Date:** 09/21/16 16:04  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 09/22/16  
**Cleanup Method:** EPA 3640A  
**Cleanup Date:** 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-10 Batch: WG934342-1						
4,4'-DDD	ND		mg/kg	0.00020	0.00020	A
4,4'-DDE	ND		mg/kg	0.00020	0.00020	A
4,4'-DDT	ND		mg/kg	0.00020	0.00020	A
Aldrin	ND		mg/kg	0.00020	0.00020	A
alpha-BHC	ND		mg/kg	0.00020	0.00020	A
alpha-Chlordane	ND		mg/kg	0.00020	0.00020	A
beta-BHC	ND		mg/kg	0.00020	0.00020	A
delta-BHC	ND		mg/kg	0.00020	0.00020	A
Dieldrin	ND		mg/kg	0.00020	0.00020	A
Endosulfan I	ND		mg/kg	0.00020	0.00020	A
Endosulfan II	ND		mg/kg	0.00020	0.00020	A
Endosulfan sulfate	ND		mg/kg	0.00020	0.00020	A
Endrin	ND		mg/kg	0.00020	0.00020	A
Endrin aldehyde	ND		mg/kg	0.00060	0.00060	A
Endrin ketone	ND		mg/kg	0.00020	0.00020	A
gamma-BHC	ND		mg/kg	0.00020	0.00020	A
gamma-Chlordane	ND		mg/kg	0.00020	0.00020	A
Heptachlor	ND		mg/kg	0.00020	0.00020	A
Methoxychlor	ND		mg/kg	0.00200	0.00200	A
Toxaphene	ND		mg/kg	0.0100	0.0100	A
Chlordane	ND		mg/kg	0.0100	0.0100	A
Heptachlor epoxide (B)	ND		mg/kg	0.00040	0.00040	B

Project Name: US WIND

Lab Number: L1629122

Project Number: 4167-022

Report Date: 10/18/16

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 1,8081B  
 Analytical Date: 10/01/16 15:48  
 Analyst: DP

Extraction Method: EPA 3570  
 Extraction Date: 09/21/16 16:04  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/22/16  
 Cleanup Method: EPA 3640A  
 Cleanup Date: 09/23/16

Parameter	Result	Qualifier	Units	RL	MDL
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-10 Batch: WG934342-1					

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
TMX - Surrogate	54		30-150	A
DCB - Surrogate	58		30-150	A
TMX - Surrogate	54		30-150	B
DCB - Surrogate	55		30-150	B

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-10 Batch: WG934342-2 WG934342-3									
4,4'-DDD	84		88		40-140	5		30	A
4,4'-DDE	82		88		40-140	7		30	A
4,4'-DDT	84		88		40-140	5		30	A
Aldrin	72		79		40-140	9		30	A
alpha-BHC	74		84		40-140	13		30	A
alpha-Chlordane	79		84		40-140	6		30	A
beta-BHC	73		79		40-140	8		30	A
delta-BHC	73		79		40-140	8		30	A
Dieldrin	79		86		40-140	8		30	A
Endosulfan I	75		79		40-140	5		30	A
Endosulfan II	76		81		40-140	6		30	A
Endosulfan sulfate	76		82		40-140	8		30	A
Endrin	84		88		40-140	5		30	A
Endrin aldehyde	62		63		40-140	2		30	A
Endrin ketone	68		71		40-140	4		30	A
gamma-BHC	75		84		40-140	11		30	A
gamma-Chlordane	78		84		40-140	7		30	A
Heptachlor	71		77		40-140	8		30	A
Methoxychlor	74		75		40-140	1		30	A

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-10 Batch: WG934342-2 WG934342-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria	<i>Column</i>
TMX - Surrogate	69		76		30-150	A
DCB - Surrogate	75		77		30-150	A
TMX - Surrogate	64		72		30-150	B
DCB - Surrogate	69		68		30-150	B

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-10 Batch: WG934342-2 WG934342-3									
Heptachlor epoxide (B)	68		74		40-140	8		30	B

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
TMX - Surrogate	69		76		30-150	A
DCB - Surrogate	75		77		30-150	A
TMX - Surrogate	64		72		30-150	B
DCB - Surrogate	69		68		30-150	B



## Matrix Spike Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>	<i>Column</i>
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG934342-4 WG934342-5 QC Sample: L1629122-04 Client ID: VC-A-03-DUP													
4,4'-DDD	ND	0.00941	0.00679	72		0.00604	64		30-150	12		30	A
4,4'-DDE	ND	0.00941	0.00670	71		0.00566	60		30-150	17		30	A
4,4'-DDT	ND	0.00941	0.00727	77		0.00650	69		30-150	11		30	A
Aldrin	ND	0.00941	0.00639	68		0.00511	54		30-150	22		30	A
alpha-BHC	ND	0.00941	0.00713	76		0.00567	60		30-150	23		30	A
alpha-Chlordane	ND	0.00941	0.00658	70		0.00538	57		30-150	20		30	A
beta-BHC	ND	0.00941	0.00621	66		0.00523	55		30-150	17		30	A
delta-BHC	ND	0.00941	0.00627	67		0.00511	54		30-150	20		30	A
Dieldrin	ND	0.00941	0.00734	78		0.00628	66		30-150	16		30	A
Endosulfan I	ND	0.00941	0.00661	70		0.00552	58		30-150	18		30	A
Endosulfan II	ND	0.00941	0.00647	69		0.00573	60		30-150	12		30	A
Endosulfan sulfate	ND	0.00941	0.00663	71		0.00595	63		30-150	11		30	A
Endrin	ND	0.00941	0.00648	69		0.00551	58		30-150	16		30	A
Endrin aldehyde	ND	0.00941	0.00571	61		0.00466	49		30-150	20		30	A
Endrin ketone	ND	0.00941	0.00825	88		0.00745	79		30-150	10		30	A
gamma-BHC	ND	0.00941	0.00702	75		0.00559	59		30-150	23		30	A
gamma-Chlordane	ND	0.00941	0.00680	72		0.00560	59		30-150	19		30	A
Heptachlor	ND	0.00941	0.00640	68		0.00514	54		30-150	22		30	A
Heptachlor epoxide (B)	ND	0.00941	0.00691	73		0.00562	59		30-150	21		30	B
Methoxychlor	ND	0.00941	0.00554	59		0.00516	54		30-150	7		30	A

## Matrix Spike Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
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Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG934342-4 WG934342-5 QC Sample: L1629122-04 Client ID: VC-A-03-DUP

<i>Surrogate</i>	<i>MS</i>		<i>MSD</i>		<i>Acceptance Criteria</i>	<i>Column</i>
	<i>% Recovery</i>	<i>Qualifier</i>	<i>% Recovery</i>	<i>Qualifier</i>		
DCB - Surrogate	59		55		30-150	A
TMX - Surrogate	64		51		30-150	A
DCB - Surrogate	55		51		30-150	B
TMX - Surrogate	64		50		30-150	B



## METALS

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-01  
 Client ID: VC-A-01  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 83%

Date Collected: 09/10/16 09:00  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	4020		mg/kg	31.6	4.68	10	10/05/16 14:25	10/06/16 13:59	EPA 3050B	1,6020A	DB
Antimony, Total	0.069		mg/kg	0.033	0.002	2	10/05/16 14:30	10/06/16 16:45	EPA 3050B	1,6020A	DB
Arsenic, Total	0.938		mg/kg	0.032	0.004	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Barium, Total	8.21		mg/kg	0.948	0.243	10	10/05/16 14:25	10/06/16 13:59	EPA 3050B	1,6020A	DB
Beryllium, Total	0.137		mg/kg	0.019	0.006	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Cadmium, Total	0.007	J	mg/kg	0.013	0.002	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Calcium, Total	164		mg/kg	158	19.2	10	10/05/16 14:25	10/06/16 13:59	EPA 3050B	1,6020A	DB
Chromium, Total	4.56		mg/kg	0.126	0.030	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Cobalt, Total	0.554		mg/kg	0.032	0.003	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Copper, Total	1.50		mg/kg	0.126	0.007	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Iron, Total	1680		mg/kg	63.2	6.51	10	10/05/16 14:25	10/06/16 13:59	EPA 3050B	1,6020A	DB
Lead, Total	3.87		mg/kg	0.190	0.061	10	10/05/16 14:25	10/06/16 13:59	EPA 3050B	1,6020A	DB
Magnesium, Total	458		mg/kg	31.6	3.90	10	10/05/16 14:25	10/06/16 13:59	EPA 3050B	1,6020A	DB
Manganese, Total	5.04		mg/kg	0.126	0.028	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Mercury, Total	0.011	J	mg/kg	0.013	0.002	5	10/05/16 14:15	10/12/16 13:38	EPA 7474	1,7474	LC
Nickel, Total	1.57		mg/kg	0.063	0.009	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Potassium, Total	363		mg/kg	31.6	4.78	10	10/05/16 14:25	10/06/16 13:59	EPA 3050B	1,6020A	DB
Selenium, Total	0.151		mg/kg	0.063	0.016	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Silver, Total	0.020	J	mg/kg	0.033	0.001	2	10/05/16 14:30	10/06/16 16:45	EPA 3050B	1,6020A	DB
Sodium, Total	2340		mg/kg	31.6	2.72	10	10/05/16 14:25	10/06/16 13:59	EPA 3050B	1,6020A	DB
Thallium, Total	0.035	J	mg/kg	0.063	0.009	10	10/05/16 14:25	10/06/16 13:59	EPA 3050B	1,6020A	DB
Vanadium, Total	8.49		mg/kg	0.063	0.003	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB
Zinc, Total	4.46		mg/kg	0.632	0.164	2	10/05/16 14:25	10/06/16 13:17	EPA 3050B	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-02  
 Client ID: VC-A-02  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 84%

Date Collected: 09/10/16 08:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	1940		mg/kg	6.97	1.03	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Antimony, Total	0.040		mg/kg	0.038	0.002	2	10/05/16 14:30	10/06/16 16:46	EPA 3050B	1,6020A	DB
Arsenic, Total	0.407		mg/kg	0.035	0.004	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Barium, Total	2.19		mg/kg	0.209	0.054	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Beryllium, Total	0.057		mg/kg	0.021	0.006	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Cadmium, Total	0.005	J	mg/kg	0.014	0.002	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Calcium, Total	123		mg/kg	34.8	4.24	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Chromium, Total	2.59		mg/kg	0.139	0.033	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Cobalt, Total	0.745		mg/kg	0.035	0.004	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Copper, Total	0.726		mg/kg	0.139	0.008	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Iron, Total	794		mg/kg	13.9	1.44	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Lead, Total	2.23		mg/kg	0.042	0.013	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Magnesium, Total	287		mg/kg	6.97	0.860	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Manganese, Total	3.25		mg/kg	0.139	0.031	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Mercury, Total	0.007	J	mg/kg	0.013	0.002	5	10/05/16 14:15	10/12/16 13:40	EPA 7474	1,7474	LC
Nickel, Total	1.30		mg/kg	0.070	0.010	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Potassium, Total	202		mg/kg	6.97	1.05	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Selenium, Total	0.040	J	mg/kg	0.070	0.017	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Silver, Total	0.014	J	mg/kg	0.038	0.001	2	10/05/16 14:30	10/06/16 16:46	EPA 3050B	1,6020A	DB
Sodium, Total	1570		mg/kg	6.97	0.599	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Thallium, Total	0.016		mg/kg	0.014	0.002	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Vanadium, Total	4.29		mg/kg	0.070	0.003	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB
Zinc, Total	3.12		mg/kg	0.697	0.181	2	10/05/16 14:25	10/06/16 13:19	EPA 3050B	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-03  
 Client ID: VC-A-03  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 86%

Date Collected: 09/07/16 19:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	2980		mg/kg	36.7	5.44	10	10/05/16 14:25	10/06/16 14:03	EPA 3050B	1,6020A	DB
Antimony, Total	0.035		mg/kg	0.032	0.002	2	10/05/16 14:30	10/06/16 16:47	EPA 3050B	1,6020A	DB
Arsenic, Total	0.347		mg/kg	0.037	0.005	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Barium, Total	3.46		mg/kg	0.220	0.056	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Beryllium, Total	0.069		mg/kg	0.022	0.006	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Cadmium, Total	0.003	J	mg/kg	0.015	0.002	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Calcium, Total	120	J	mg/kg	184	22.3	10	10/05/16 14:25	10/06/16 14:03	EPA 3050B	1,6020A	DB
Chromium, Total	3.74		mg/kg	0.147	0.034	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Cobalt, Total	0.363		mg/kg	0.037	0.004	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Copper, Total	1.00		mg/kg	0.147	0.008	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Iron, Total	696		mg/kg	73.4	7.57	10	10/05/16 14:25	10/06/16 14:03	EPA 3050B	1,6020A	DB
Lead, Total	2.28		mg/kg	0.044	0.014	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Magnesium, Total	332		mg/kg	36.7	4.53	10	10/05/16 14:25	10/06/16 14:03	EPA 3050B	1,6020A	DB
Manganese, Total	3.49		mg/kg	0.147	0.033	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Mercury, Total	0.007	J	mg/kg	0.012	0.002	5	10/05/16 14:15	10/12/16 13:43	EPA 7474	1,7474	LC
Nickel, Total	1.22		mg/kg	0.073	0.011	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Potassium, Total	286		mg/kg	36.7	5.55	10	10/05/16 14:25	10/06/16 14:03	EPA 3050B	1,6020A	DB
Selenium, Total	0.096		mg/kg	0.073	0.018	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Silver, Total	0.012	J	mg/kg	0.032	0.001	2	10/05/16 14:30	10/06/16 16:47	EPA 3050B	1,6020A	DB
Sodium, Total	1590		mg/kg	36.7	3.16	10	10/05/16 14:25	10/06/16 14:03	EPA 3050B	1,6020A	DB
Thallium, Total	0.025		mg/kg	0.015	0.002	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Vanadium, Total	6.14		mg/kg	0.073	0.003	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB
Zinc, Total	3.63		mg/kg	0.734	0.191	2	10/05/16 14:25	10/06/16 13:21	EPA 3050B	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-04  
 Client ID: VC-A-03-DUP  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 87%

Date Collected: 09/07/16 19:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	2000		mg/kg	34.2	5.08	10	10/05/16 14:25	10/06/16 14:05	EPA 3050B	1,6020A	DB
Antimony, Total	0.035		mg/kg	0.035	0.002	2	10/05/16 14:30	10/06/16 16:48	EPA 3050B	1,6020A	DB
Arsenic, Total	0.269		mg/kg	0.034	0.004	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Barium, Total	2.57		mg/kg	0.205	0.053	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Beryllium, Total	0.040		mg/kg	0.021	0.006	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Cadmium, Total	0.004	J	mg/kg	0.014	0.002	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Calcium, Total	105	J	mg/kg	171	20.8	10	10/05/16 14:25	10/06/16 14:05	EPA 3050B	1,6020A	DB
Chromium, Total	3.10		mg/kg	0.137	0.032	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Cobalt, Total	0.243		mg/kg	0.034	0.004	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Copper, Total	0.751		mg/kg	0.137	0.008	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Iron, Total	546		mg/kg	13.7	1.41	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Lead, Total	1.91		mg/kg	0.041	0.013	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Magnesium, Total	280		mg/kg	34.2	4.22	10	10/05/16 14:25	10/06/16 14:05	EPA 3050B	1,6020A	DB
Manganese, Total	3.01		mg/kg	0.137	0.031	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Mercury, Total	0.008	J	mg/kg	0.014	0.002	5	10/05/16 14:15	10/12/16 13:45	EPA 7474	1,7474	LC
Nickel, Total	0.844		mg/kg	0.069	0.010	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Potassium, Total	215		mg/kg	34.2	5.18	10	10/05/16 14:25	10/06/16 14:05	EPA 3050B	1,6020A	DB
Selenium, Total	0.042	J	mg/kg	0.069	0.017	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Silver, Total	0.016	J	mg/kg	0.035	0.001	2	10/05/16 14:30	10/06/16 16:48	EPA 3050B	1,6020A	DB
Sodium, Total	1400		mg/kg	34.2	2.94	10	10/05/16 14:25	10/06/16 14:05	EPA 3050B	1,6020A	DB
Thallium, Total	0.017		mg/kg	0.014	0.002	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Vanadium, Total	4.38		mg/kg	0.069	0.003	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB
Zinc, Total	2.49		mg/kg	0.685	0.178	2	10/05/16 14:25	10/06/16 13:23	EPA 3050B	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-05  
 Client ID: VC-A-04-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 67%

Date Collected: 09/10/16 12:00  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	11700		mg/kg	43.4	6.44	10	10/05/16 14:25	10/06/16 14:15	EPA 3050B	1,6020A	DB
Antimony, Total	0.108		mg/kg	0.043	0.002	2	10/05/16 14:30	10/06/16 16:54	EPA 3050B	1,6020A	DB
Arsenic, Total	7.30		mg/kg	0.043	0.005	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Barium, Total	39.8		mg/kg	1.30	0.333	10	10/05/16 14:25	10/06/16 14:15	EPA 3050B	1,6020A	DB
Beryllium, Total	0.773		mg/kg	0.026	0.008	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Cadmium, Total	0.126		mg/kg	0.017	0.002	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Calcium, Total	1260		mg/kg	217	26.4	10	10/05/16 14:25	10/06/16 14:15	EPA 3050B	1,6020A	DB
Chromium, Total	35.4		mg/kg	0.174	0.041	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Cobalt, Total	10.2		mg/kg	0.043	0.005	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Copper, Total	8.45		mg/kg	0.174	0.010	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Iron, Total	32300		mg/kg	434	44.7	50	10/05/16 14:25	10/06/16 14:33	EPA 3050B	1,6020A	DB
Lead, Total	8.60		mg/kg	0.260	0.084	10	10/05/16 14:25	10/06/16 14:15	EPA 3050B	1,6020A	DB
Magnesium, Total	4610		mg/kg	43.4	5.35	10	10/05/16 14:25	10/06/16 14:15	EPA 3050B	1,6020A	DB
Manganese, Total	210		mg/kg	0.174	0.039	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Mercury, Total	0.022		mg/kg	0.017	0.002	5	10/05/16 14:15	10/12/16 14:15	EPA 7474	1,7474	LC
Nickel, Total	21.3		mg/kg	0.087	0.013	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Potassium, Total	2490		mg/kg	43.4	6.56	10	10/05/16 14:25	10/06/16 14:15	EPA 3050B	1,6020A	DB
Selenium, Total	0.659		mg/kg	0.087	0.022	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Silver, Total	0.058		mg/kg	0.043	0.001	2	10/05/16 14:30	10/06/16 16:54	EPA 3050B	1,6020A	DB
Sodium, Total	4930		mg/kg	43.4	3.73	10	10/05/16 14:25	10/06/16 14:15	EPA 3050B	1,6020A	DB
Thallium, Total	0.507		mg/kg	0.087	0.012	10	10/05/16 14:25	10/06/16 14:15	EPA 3050B	1,6020A	DB
Vanadium, Total	34.8		mg/kg	0.087	0.004	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB
Zinc, Total	57.4		mg/kg	0.868	0.225	2	10/05/16 14:25	10/06/16 13:39	EPA 3050B	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-06  
 Client ID: VC-A-04-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 79%

Date Collected: 09/10/16 12:15  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	2260		mg/kg	8.46	1.25	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Antimony, Total	0.028	J	mg/kg	0.038	0.002	2	10/05/16 14:30	10/06/16 16:55	EPA 3050B	1,6020A	DB
Arsenic, Total	1.25		mg/kg	0.042	0.005	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Barium, Total	6.75		mg/kg	0.254	0.065	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Beryllium, Total	0.165		mg/kg	0.025	0.007	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Cadmium, Total	0.010	J	mg/kg	0.017	0.002	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Calcium, Total	383		mg/kg	42.3	5.15	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Chromium, Total	5.82		mg/kg	0.169	0.040	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Cobalt, Total	1.06		mg/kg	0.042	0.004	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Copper, Total	1.46		mg/kg	0.169	0.010	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Iron, Total	4470		mg/kg	84.6	8.72	10	10/05/16 14:25	10/06/16 14:22	EPA 3050B	1,6020A	DB
Lead, Total	2.46		mg/kg	0.051	0.016	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Magnesium, Total	489		mg/kg	8.46	1.04	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Manganese, Total	17.9		mg/kg	0.169	0.038	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Mercury, Total	0.008	J	mg/kg	0.015	0.002	5	10/05/16 14:15	10/12/16 14:18	EPA 7474	1,7474	LC
Nickel, Total	2.48		mg/kg	0.085	0.013	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Potassium, Total	328		mg/kg	8.46	1.28	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Selenium, Total	0.192		mg/kg	0.085	0.021	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Silver, Total	0.014	J	mg/kg	0.038	0.001	2	10/05/16 14:30	10/06/16 16:55	EPA 3050B	1,6020A	DB
Sodium, Total	1430		mg/kg	8.46	0.727	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Thallium, Total	0.037		mg/kg	0.017	0.002	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Vanadium, Total	6.47		mg/kg	0.085	0.004	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB
Zinc, Total	7.04		mg/kg	0.846	0.220	2	10/05/16 14:25	10/06/16 13:41	EPA 3050B	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-07  
 Client ID: VC-A-04-S3  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 73%

Date Collected: 09/10/16 12:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	8890		mg/kg	45.2	6.70	10	10/05/16 14:25	10/06/16 14:24	EPA 3050B	1,6020A	DB
Antimony, Total	0.096		mg/kg	0.040	0.002	2	10/05/16 14:30	10/06/16 16:56	EPA 3050B	1,6020A	DB
Arsenic, Total	1.53		mg/kg	0.045	0.006	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Barium, Total	23.9		mg/kg	1.36	0.347	10	10/05/16 14:25	10/06/16 14:24	EPA 3050B	1,6020A	DB
Beryllium, Total	1.03		mg/kg	0.027	0.008	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Cadmium, Total	0.006	J	mg/kg	0.018	0.002	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Calcium, Total	1960		mg/kg	226	27.5	10	10/05/16 14:25	10/06/16 14:24	EPA 3050B	1,6020A	DB
Chromium, Total	22.6		mg/kg	0.181	0.042	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Cobalt, Total	6.20		mg/kg	0.045	0.005	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Copper, Total	6.10		mg/kg	0.181	0.010	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Iron, Total	14600		mg/kg	90.4	9.31	10	10/05/16 14:25	10/06/16 14:24	EPA 3050B	1,6020A	DB
Lead, Total	14.6		mg/kg	0.271	0.087	10	10/05/16 14:25	10/06/16 14:24	EPA 3050B	1,6020A	DB
Magnesium, Total	2750		mg/kg	45.2	5.57	10	10/05/16 14:25	10/06/16 14:24	EPA 3050B	1,6020A	DB
Manganese, Total	80.2		mg/kg	0.181	0.040	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Mercury, Total	0.037		mg/kg	0.013	0.002	5	10/05/16 14:15	10/12/16 14:20	EPA 7474	1,7474	LC
Nickel, Total	13.4		mg/kg	0.090	0.014	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Potassium, Total	1480		mg/kg	45.2	6.83	10	10/05/16 14:25	10/06/16 14:24	EPA 3050B	1,6020A	DB
Selenium, Total	0.532		mg/kg	0.090	0.023	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Silver, Total	0.042		mg/kg	0.040	0.001	2	10/05/16 14:30	10/06/16 16:56	EPA 3050B	1,6020A	DB
Sodium, Total	3470		mg/kg	45.2	3.88	10	10/05/16 14:25	10/06/16 14:24	EPA 3050B	1,6020A	DB
Thallium, Total	0.137		mg/kg	0.090	0.012	10	10/05/16 14:25	10/06/16 14:24	EPA 3050B	1,6020A	DB
Vanadium, Total	12.4		mg/kg	0.090	0.004	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB
Zinc, Total	37.8		mg/kg	0.904	0.235	2	10/05/16 14:25	10/06/16 13:44	EPA 3050B	1,6020A	DB





**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-08  
 Client ID: VC-A-05  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 86%

Date Collected: 09/10/16 13:30  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	1330		mg/kg	6.94	1.03	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Antimony, Total	0.027	J	mg/kg	0.033	0.002	2	10/05/16 14:30	10/06/16 16:57	EPA 3050B	1,6020A	DB
Arsenic, Total	0.541		mg/kg	0.035	0.004	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Barium, Total	4.78		mg/kg	0.208	0.053	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Beryllium, Total	0.102		mg/kg	0.021	0.006	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Cadmium, Total	0.111		mg/kg	0.014	0.002	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Calcium, Total	135		mg/kg	34.7	4.22	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Chromium, Total	2.81		mg/kg	0.139	0.033	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Cobalt, Total	2.01		mg/kg	0.035	0.004	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Copper, Total	1.17		mg/kg	0.139	0.008	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Iron, Total	1340		mg/kg	13.9	1.43	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Lead, Total	1.44		mg/kg	0.042	0.013	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Magnesium, Total	250		mg/kg	6.94	0.856	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Manganese, Total	7.64		mg/kg	0.139	0.031	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Mercury, Total	0.007	J	mg/kg	0.012	0.001	5	10/05/16 14:15	10/12/16 14:23	EPA 7474	1,7474	LC
Nickel, Total	2.20		mg/kg	0.069	0.010	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Potassium, Total	144		mg/kg	6.94	1.05	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Selenium, Total	0.106		mg/kg	0.069	0.017	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Silver, Total	0.008	J	mg/kg	0.033	0.001	2	10/05/16 14:30	10/06/16 16:57	EPA 3050B	1,6020A	DB
Sodium, Total	623		mg/kg	6.94	0.596	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Thallium, Total	0.018		mg/kg	0.014	0.002	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Vanadium, Total	2.79		mg/kg	0.069	0.003	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB
Zinc, Total	30.7		mg/kg	0.694	0.180	2	10/05/16 14:25	10/06/16 13:46	EPA 3050B	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-09  
 Client ID: VC-A-06-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 86%

Date Collected: 09/13/16 10:00  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	4410		mg/kg	28.1	4.16	10	10/05/16 14:25	10/06/16 14:28	EPA 3050B	1,6020A	DB
Antimony, Total	0.037		mg/kg	0.030	0.002	2	10/05/16 14:30	10/06/16 16:57	EPA 3050B	1,6020A	DB
Arsenic, Total	1.59		mg/kg	0.028	0.003	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Barium, Total	3.04		mg/kg	0.842	0.216	10	10/05/16 14:25	10/06/16 14:28	EPA 3050B	1,6020A	DB
Beryllium, Total	0.149		mg/kg	0.017	0.005	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Cadmium, Total	0.009	J	mg/kg	0.011	0.001	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Calcium, Total	2560		mg/kg	140	17.1	10	10/05/16 14:25	10/06/16 14:28	EPA 3050B	1,6020A	DB
Chromium, Total	6.17		mg/kg	0.112	0.026	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Cobalt, Total	1.16		mg/kg	0.028	0.003	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Copper, Total	1.73		mg/kg	0.112	0.006	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Iron, Total	2600		mg/kg	11.2	1.16	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Lead, Total	1.84		mg/kg	0.168	0.054	10	10/05/16 14:25	10/06/16 14:28	EPA 3050B	1,6020A	DB
Magnesium, Total	680		mg/kg	28.1	3.46	10	10/05/16 14:25	10/06/16 14:28	EPA 3050B	1,6020A	DB
Manganese, Total	15.4		mg/kg	0.112	0.025	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Mercury, Total	0.011	J	mg/kg	0.011	0.001	5	10/05/16 14:15	10/12/16 14:25	EPA 7474	1,7474	LC
Nickel, Total	2.73		mg/kg	0.056	0.008	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Potassium, Total	353		mg/kg	28.1	4.24	10	10/05/16 14:25	10/06/16 14:28	EPA 3050B	1,6020A	DB
Selenium, Total	0.124		mg/kg	0.056	0.014	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Silver, Total	0.011	J	mg/kg	0.030	0.001	2	10/05/16 14:30	10/06/16 16:57	EPA 3050B	1,6020A	DB
Sodium, Total	2110		mg/kg	28.1	2.41	10	10/05/16 14:25	10/06/16 14:28	EPA 3050B	1,6020A	DB
Thallium, Total	0.023	J	mg/kg	0.056	0.008	10	10/05/16 14:25	10/06/16 14:28	EPA 3050B	1,6020A	DB
Vanadium, Total	9.56		mg/kg	0.056	0.003	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB
Zinc, Total	11.5		mg/kg	0.562	0.146	2	10/05/16 14:25	10/06/16 13:48	EPA 3050B	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

Lab ID: L1629122-10  
 Client ID: VC-A-06-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 86%

Date Collected: 09/13/16 10:15  
 Date Received: 09/15/16  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	5880		mg/kg	35.4	5.25	10	10/05/16 14:25	10/06/16 14:30	EPA 3050B	1,6020A	DB
Antimony, Total	0.034	J	mg/kg	0.036	0.002	2	10/05/16 14:30	10/06/16 16:58	EPA 3050B	1,6020A	DB
Arsenic, Total	0.307		mg/kg	0.035	0.004	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Barium, Total	2.30		mg/kg	1.06	0.272	10	10/05/16 14:25	10/06/16 14:30	EPA 3050B	1,6020A	DB
Beryllium, Total	0.182		mg/kg	0.021	0.006	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Cadmium, Total	0.016		mg/kg	0.014	0.002	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Calcium, Total	177		mg/kg	177	21.5	10	10/05/16 14:25	10/06/16 14:30	EPA 3050B	1,6020A	DB
Chromium, Total	5.02		mg/kg	0.142	0.033	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Cobalt, Total	0.782		mg/kg	0.035	0.004	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Copper, Total	1.75		mg/kg	0.142	0.008	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Iron, Total	1050		mg/kg	14.2	1.46	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Lead, Total	1.45		mg/kg	0.212	0.068	10	10/05/16 14:25	10/06/16 14:30	EPA 3050B	1,6020A	DB
Magnesium, Total	481		mg/kg	35.4	4.37	10	10/05/16 14:25	10/06/16 14:30	EPA 3050B	1,6020A	DB
Manganese, Total	7.02		mg/kg	0.142	0.032	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Mercury, Total	0.010	J	mg/kg	0.011	0.001	5	10/05/16 14:15	10/12/16 14:28	EPA 7474	1,7474	LC
Nickel, Total	2.46		mg/kg	0.071	0.011	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Potassium, Total	258		mg/kg	35.4	5.35	10	10/05/16 14:25	10/06/16 14:30	EPA 3050B	1,6020A	DB
Selenium, Total	0.079		mg/kg	0.071	0.018	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Silver, Total	0.017	J	mg/kg	0.036	0.001	2	10/05/16 14:30	10/06/16 16:58	EPA 3050B	1,6020A	DB
Sodium, Total	1710		mg/kg	35.4	3.04	10	10/05/16 14:25	10/06/16 14:30	EPA 3050B	1,6020A	DB
Thallium, Total	0.023	J	mg/kg	0.071	0.010	10	10/05/16 14:25	10/06/16 14:30	EPA 3050B	1,6020A	DB
Vanadium, Total	6.35		mg/kg	0.071	0.003	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB
Zinc, Total	9.07		mg/kg	0.708	0.184	2	10/05/16 14:25	10/06/16 13:50	EPA 3050B	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

## Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-10 Batch: WG939137-1										
Antimony, Total	ND		mg/kg	0.050	0.003	2	10/05/16 14:30	10/06/16 16:43	1,6020A	DB
Silver, Total	ND		mg/kg	0.050	0.001	2	10/05/16 14:30	10/06/16 16:43	1,6020A	DB

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-10 Batch: WG939139-1										
Aluminum, Total	ND		mg/kg	10.0	1.48	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Arsenic, Total	0.006	J	mg/kg	0.050	0.006	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Barium, Total	0.126	J	mg/kg	0.300	0.077	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Beryllium, Total	ND		mg/kg	0.030	0.009	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Cadmium, Total	ND		mg/kg	0.020	0.003	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Calcium, Total	ND		mg/kg	50.0	6.08	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Chromium, Total	ND		mg/kg	0.200	0.047	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Cobalt, Total	ND		mg/kg	0.050	0.005	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Copper, Total	ND		mg/kg	0.200	0.011	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Iron, Total	ND		mg/kg	20.0	2.06	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Lead, Total	ND		mg/kg	0.060	0.019	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Magnesium, Total	ND		mg/kg	10.0	1.23	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Manganese, Total	ND		mg/kg	0.200	0.045	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Nickel, Total	0.017	J	mg/kg	0.100	0.015	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Potassium, Total	ND		mg/kg	10.0	1.51	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Selenium, Total	ND		mg/kg	0.100	0.025	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Sodium, Total	1.50	J	mg/kg	10.0	0.860	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Thallium, Total	ND		mg/kg	0.020	0.003	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Vanadium, Total	0.051	J	mg/kg	0.100	0.005	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB
Zinc, Total	ND		mg/kg	1.00	0.260	2	10/05/16 14:25	10/06/16 13:09	1,6020A	DB



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

## Method Blank Analysis Batch Quality Control

### Prep Information

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Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-10 Batch: WG939140-1										
Mercury, Total	0.005	J	mg/kg	0.013	0.002	5	10/05/16 14:15	10/12/16 13:17	1,7474	LC

### Prep Information

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Digestion Method: EPA 7474



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: 4167-022

Lab Number: L1629122

Report Date: 10/18/16

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01-10 Batch: WG939137-2 SRM Lot Number: D091-540								
Antimony, Total	124		-		1-200	-		20
Silver, Total	78		-		76-124	-		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-10 Batch: WG939139-2 SRM Lot Number: D091-540					
Aluminum, Total	75	-	52-148	-	20
Arsenic, Total	107	-	80-121	-	20
Barium, Total	100	-	84-117	-	20
Beryllium, Total	101	-	83-117	-	20
Cadmium, Total	109	-	83-117	-	20
Calcium, Total	96	-	81-118	-	20
Chromium, Total	106	-	80-119	-	20
Cobalt, Total	114	-	84-115	-	20
Copper, Total	115	-	82-117	-	20
Iron, Total	79	-	47-154	-	20
Lead, Total	108	-	82-118	-	20
Magnesium, Total	86	-	77-123	-	20
Manganese, Total	103	-	82-118	-	20
Nickel, Total	112	-	83-117	-	20
Potassium, Total	82	-	72-128	-	20
Selenium, Total	106	-	79-121	-	20
Sodium, Total	92	-	73-126	-	20
Thallium, Total	104	-	80-121	-	20
Vanadium, Total	98	-	78-122	-	20
Zinc, Total	108	-	82-118	-	20

## Lab Control Sample Analysis

Batch Quality Control

Project Name: US WIND

Project Number: 4167-022

Lab Number: L1629122

Report Date: 10/18/16

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-10 Batch: WG939140-2 SRM Lot Number: D091-540					
Mercury, Total	126	-	72-128	-	20



**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

<b>Parameter</b>	<b>Native Sample</b>	<b>MS Added</b>	<b>MS Found</b>	<b>MS %Recovery</b>	<b>MSD Qual</b>	<b>MSD Found</b>	<b>MSD %Recovery</b>	<b>MSD Qual</b>	<b>Recovery Limits</b>	<b>RPD</b>	<b>RPD Qual</b>	<b>RPD Limits</b>
Total Metals - Mansfield Lab Associated sample(s): 01-10    QC Batch ID: WG939137-4    WG939137-5    QC Sample: L1629122-04    Client ID: VC-A-03-DUP												
Antimony, Total	0.035	1.39	1.70	122		1.73	122		75-125	2		20
Silver, Total	0.016J	1.39	1.34	96		1.38	98		75-125	3		20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits		
Total Metals - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG939139-4 WG939139-5 QC Sample: L1629122-04 Client ID: VC-A-03-DUP											
Aluminum, Total	2000	689	4360	342	Q	4770	400	Q	75-125	9	20
Arsenic, Total	0.269	138	142	103		142	102		75-125	0	20
Barium, Total	2.57	138	149	106		147	104		75-125	1	20
Beryllium, Total	0.040	68.9	70.2	102		72.6	105		75-125	3	20
Cadmium, Total	0.004J	68.9	75.7	110		72.2	104		75-125	5	20
Calcium, Total	105.J	689	860	125		880	127	Q	75-125	2	20
Chromium, Total	3.10	138	160	114		160	113		75-125	0	20
Cobalt, Total	0.243	138	165	120		162	117		75-125	2	20
Copper, Total	0.751	138	160	116		156	112		75-125	3	20
Iron, Total	546.	689	1650	160	Q	1580	149	Q	75-125	4	20
Lead, Total	1.91	138	150	107		148	105		75-125	1	20
Magnesium, Total	280.	689	1070	115		1050	111		75-125	2	20
Manganese, Total	3.01	138	158	112		154	109		75-125	3	20
Nickel, Total	0.844	138	164	118		160	115		75-125	2	20
Potassium, Total	215.	689	908	100		963	108		75-125	6	20
Selenium, Total	0.042J	138	138	100		139	100		75-125	1	20
Sodium, Total	1400	689	2260	125		2340	136	Q	75-125	3	20
Thallium, Total	0.017	138	142	103		140	101		75-125	1	20
Vanadium, Total	4.38	138	157	111		155	109		75-125	1	20
Zinc, Total	2.49	138	153	109		151	107		75-125	1	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits		
Total Metals - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG939140-4 WG939140-5 QC Sample: L1629122-04 Client ID: VC-A-03-DUP											
Mercury, Total	0.008J	0.698	0.868	124	Q	0.892	125	Q	80-120	3	20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: US WIND

Project Number: 4167-022

Lab Number: L1629122

Report Date: 10/18/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG939137-3 QC Sample: L1629122-04 Client ID: VC-A-03-DUP						
Antimony, Total	0.035	0.030J	mg/kg	NC		20
Silver, Total	0.016J	0.043	mg/kg	NC		20

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG939139-3 QC Sample: L1629122-04 Client ID: VC-A-03-DUP					
Aluminum, Total	2000	1850	mg/kg	4	20
Arsenic, Total	0.269	0.259	mg/kg	4	20
Barium, Total	2.57	3.32	mg/kg	25	20
Beryllium, Total	0.040	0.037	mg/kg	6	20
Cadmium, Total	0.004J	0.006J	mg/kg	NC	20
Calcium, Total	105.J	86.0	mg/kg	NC	20
Chromium, Total	3.10	3.13	mg/kg	1	20
Cobalt, Total	0.243	0.247	mg/kg	2	20
Copper, Total	0.751	0.646	mg/kg	15	20
Iron, Total	546.	558	mg/kg	2	20
Lead, Total	1.91	2.01	mg/kg	5	20
Magnesium, Total	280.	232	mg/kg	10	20
Manganese, Total	3.01	2.81	mg/kg	7	20
Nickel, Total	0.844	0.884	mg/kg	5	20
Potassium, Total	215.	204	mg/kg	4	20
Selenium, Total	0.042J	0.084	mg/kg	NC	20
Sodium, Total	1400	1320	mg/kg	2	20
Thallium, Total	0.017	0.019	mg/kg	13	20
Vanadium, Total	4.38	4.81	mg/kg	9	20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: US WIND

Project Number: 4167-022

Lab Number: L1629122

Report Date: 10/18/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG939139-3 QC Sample: L1629122-04 Client ID: VC-A-03-DUP</b>					
Zinc, Total	2.49	2.55	mg/kg	2	20
<b>Total Metals - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG939139-3 QC Sample: L1629122-04 Client ID: VC-A-03-DUP</b>					
Aluminum, Total	2000	2090	mg/kg	4	20
Calcium, Total	105.J	103J	mg/kg	NC	20
Magnesium, Total	280.	276	mg/kg	1	20
Potassium, Total	215.	223	mg/kg	4	20
Sodium, Total	1400	1450	mg/kg	4	20
<b>Total Metals - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG939140-3 QC Sample: L1629122-04 Client ID: VC-A-03-DUP</b>					
Mercury, Total	0.008J	0.008J	mg/kg	NC	20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-01  
**Client ID:** VC-A-01  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/10/16 09:00  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	2660		mg/kg	500	500.	1	-	10/03/16 14:46	13,-	CM
Total Organic Carbon (Rep2)	2210		mg/kg	500	500.	1	-	10/03/16 14:46	13,-	CM
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Gravel	0.100		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Sand	0.600		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Medium Sand	16.3		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Sand	59.2		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Silt Fine	20.2		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Clay Fine	3.60		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Total Fines	23.8		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
<b>General Chemistry - Westborough Lab</b>										
Solids, Ash	83		%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
Nitrogen, Ammonia	2.2	J	mg/kg	8.7	2.2	1	10/04/16 02:30	10/05/16 00:45	121,4500NH3-BH	AT
Phosphorus, Total	68		mg/kg	13	4.2	2.1	-	10/04/16 11:15	121,4500P-E	SD
Organic Matter, Total	1.6		%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	83.3		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	0.029		%	0.010	NA	1	-	10/04/16 11:35	91,-	CM
% Soot (Rep 2)	0.028		%	0.010	NA	1	-	10/04/16 11:35	91,-	CM
Moisture	16.7		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
Specific Gravity	2.48		-	-	NA	1	-	10/04/16 10:00	12,D854	AR
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	127.8		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Moisture	19.20		%	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Dry Density	107.3		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	16.		-	-	NA	1	-	10/05/16 11:18	12,D4318	AR
Plastic Limit	15.		-	-	NA	1	-	10/05/16 11:18	12,D4318	AR
Plasticity Index	1.0		-	-	NA	1	-	10/05/16 11:18	12,D4318	AR





**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-02  
**Client ID:** VC-A-02  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/10/16 08:30  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	2470		mg/kg	500	500.	1	-	10/03/16 14:56	13,-	CM
Total Organic Carbon (Rep2)	1990		mg/kg	500	500.	1	-	10/03/16 14:56	13,-	CM
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Gravel	0.200		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Sand	0.100		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Medium Sand	15.3		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Sand	72.6		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Silt Fine	10.8		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Clay Fine	1.00		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Total Fines	11.8		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
<b>General Chemistry - Westborough Lab</b>										
Solids, Ash	83		%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
Nitrogen, Ammonia	4.3	J	mg/kg	9.6	2.4	1	10/04/16 02:30	10/05/16 00:46	121,4500NH3-BH	AT
Phosphorus, Total	35		mg/kg	10	3.4	1.7	-	10/04/16 11:15	121,4500P-E	SD
Organic Matter, Total	0.90		%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	83.9		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	ND		%	0.010	NA	1	-	10/04/16 12:32	91,-	CM
% Soot (Rep 2)	ND		%	0.010	NA	1	-	10/04/16 12:32	91,-	CM
Moisture	16.1		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
Specific Gravity	2.69		-	-	NA	1	-	10/04/16 10:00	12,D854	AR
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	107.6		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Moisture	19.30		%	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Dry Density	90.23		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	18.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plastic Limit	19.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plasticity Index	NP		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-03  
**Client ID:** VC-A-03  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/07/16 19:30  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	1950		mg/kg	500	500.	1	-	10/03/16 15:16	13,-	CM
Total Organic Carbon (Rep2)	2160		mg/kg	500	500.	1	-	10/03/16 15:16	13,-	CM
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Gravel	0.300		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Sand	0.700		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Medium Sand	28.8		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Sand	64.5		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Silt Fine	5.20		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Clay Fine	0.500		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Total Fines	5.70		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
<b>General Chemistry - Westborough Lab</b>										
Solids, Ash	86		%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
Nitrogen, Ammonia	ND		mg/kg	8.3	2.1	1	10/04/16 02:30	10/05/16 00:47	121,4500NH3-BH	AT
Phosphorus, Total	23		mg/kg	4.1	1.4	.7	-	10/04/16 11:15	121,4500P-E	SD
Organic Matter, Total	1.0		%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	86.2		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	ND		%	0.010	NA	1	-	10/04/16 12:41	91,-	CM
% Soot (Rep 2)	0.016		%	0.010	NA	1	-	10/04/16 12:41	91,-	CM
Moisture	13.8		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
Specific Gravity	2.62		-	-	NA	1	-	10/04/16 10:00	12,D854	AR
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	101.7		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Moisture	16.40		%	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Dry Density	87.36		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	21.		-	-	NA	1	-	10/05/16 11:18	12,D4318	AR
Plastic Limit	22.		-	-	NA	1	-	10/05/16 11:18	12,D4318	AR
Plasticity Index	NP		-	-	NA	1	-	10/05/16 11:18	12,D4318	AR



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-04  
**Client ID:** VC-A-03-DUP  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/07/16 19:30  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	1110		mg/kg	500	500.	1	-	10/03/16 15:25	13,-	CM
Total Organic Carbon (Rep2)	942		mg/kg	500	500.	1	-	10/03/16 15:25	13,-	CM
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	ND		mg/kg	8.5	2.2	1	10/04/16 02:30	10/05/16 00:48	121,4500NH3-BH	AT
Phosphorus, Total	31		mg/kg	5.8	1.9	1	-	10/04/16 11:15	121,4500P-E	SD
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	86.9		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	ND		%	0.010	NA	1	-	10/04/16 12:51	91,-	CM
% Soot (Rep 2)	ND		%	0.010	NA	1	-	10/04/16 12:51	91,-	CM
Moisture	13.1		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-05  
**Client ID:** VC-A-04-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/10/16 12:00  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	ND		mg/kg	500	500.	1	-	10/04/16 09:55	13,-	CM
Total Organic Carbon (Rep2)	ND		mg/kg	500	500.	1	-	10/04/16 09:55	13,-	CM
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Gravel	1.20		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Sand	2.30		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Medium Sand	27.2		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Sand	24.3		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Silt Fine	37.2		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Clay Fine	7.80		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Total Fines	45.0		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
<b>General Chemistry - Westborough Lab</b>										
Solids, Ash	63		%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
Nitrogen, Ammonia	20		mg/kg	12	3.0	1	10/04/16 02:30	10/05/16 00:50	121,4500NH3-BH	AT
Phosphorus, Total	520		mg/kg	39	13.	5.2	-	10/04/16 11:15	121,4500P-E	SD
Organic Matter, Total	3.8		%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	66.6		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	0.054		%	0.010	NA	1	-	10/05/16 08:23	91,-	AR
% Soot (Rep 2)	0.053		%	0.010	NA	1	-	10/05/16 08:23	91,-	AR
Moisture	33.4		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
Specific Gravity	2.65		-	-	NA	1	-	10/04/16 10:00	12,D854	AR
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	91.67		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Moisture	51.00		%	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Dry Density	60.73		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	43.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plastic Limit	28.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plasticity Index	15.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-06  
**Client ID:** VC-A-04-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/10/16 12:15  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	14600		mg/kg	500	500.	1	-	10/04/16 10:04	13,-	CM
Total Organic Carbon (Rep2)	8220		mg/kg	500	500.	1	-	10/04/16 10:04	13,-	CM
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Sand	0.500		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Medium Sand	22.4		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Sand	64.8		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Silt Fine	11.1		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Clay Fine	1.20		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Total Fines	12.3		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
<b>General Chemistry - Westborough Lab</b>										
Solids, Ash	78		%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
Nitrogen, Ammonia	11		mg/kg	9.1	2.3	1	10/04/16 02:30	10/05/16 00:54	121,4500NH3-BH	AT
Phosphorus, Total	130		mg/kg	12	4.0	1.9	-	10/04/16 11:15	121,4500P-E	SD
Organic Matter, Total	1.5		%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	78.8		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	0.027		%	0.010	NA	1	-	10/05/16 07:53	91,-	AR
% Soot (Rep 2)	0.026		%	0.010	NA	1	-	10/05/16 07:53	91,-	AR
Moisture	21.2		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
Specific Gravity	2.63		-	-	NA	1	-	10/04/16 10:00	12,D854	AR
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	116.1		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Moisture	24.60		%	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Dry Density	93.14		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	20.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plastic Limit	17.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plasticity Index	3.0		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-07  
**Client ID:** VC-A-04-S3  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/10/16 12:30  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	2120		mg/kg	500	500.	1	-	10/04/16 10:14	13,-	CM
Total Organic Carbon (Rep2)	2060		mg/kg	500	500.	1	-	10/04/16 10:14	13,-	CM
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Sand	0.600		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Medium Sand	11.4		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Sand	16.1		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Silt Fine	64.9		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Clay Fine	7.00		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Total Fines	71.9		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
<b>General Chemistry - Westborough Lab</b>										
Solids, Ash	71		%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
Nitrogen, Ammonia	77		mg/kg	10	2.6	1	10/04/16 02:30	10/05/16 00:55	121,4500NH3-BH	AT
Phosphorus, Total	200		mg/kg	18	6.0	2.6	-	10/04/16 11:15	121,4500P-E	SD
Organic Matter, Total	2.6		%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	72.8		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	0.045		%	0.010	NA	1	-	10/05/16 08:03	91,-	AR
% Soot (Rep 2)	0.050		%	0.010	NA	1	-	10/05/16 08:03	91,-	AR
Moisture	27.2		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
Specific Gravity	2.72		-	-	NA	1	-	10/04/16 10:00	12,D854	AR
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	81.44		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Moisture	35.80		%	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Dry Density	59.97		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	47.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plastic Limit	33.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plasticity Index	14.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-08  
**Client ID:** VC-A-05  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/10/16 13:30  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	ND		mg/kg	500	500.	1	-	10/04/16 10:24	13,-	CM
Total Organic Carbon (Rep2)	547		mg/kg	500	500.	1	-	10/04/16 10:24	13,-	CM
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Sand	1.40		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Medium Sand	32.7		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Sand	56.5		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Silt Fine	8.90		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Clay Fine	0.500		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Total Fines	9.40		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
<b>General Chemistry - Westborough Lab</b>										
Solids, Ash	86		%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
Nitrogen, Ammonia	ND		mg/kg	8.4	2.1	1	10/04/16 02:30	10/05/16 00:55	121,4500NH3-BH	AT
Phosphorus, Total	93		mg/kg	12	3.9	2	-	10/04/16 11:15	121,4500P-E	SD
Organic Matter, Total	0.30		%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	85.8		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	0.014		%	0.010	NA	1	-	10/05/16 08:33	91,-	AR
% Soot (Rep 2)	0.013		%	0.010	NA	1	-	10/05/16 08:33	91,-	AR
Moisture	14.2		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
Specific Gravity	2.71		-	-	NA	1	-	10/04/16 10:00	12,D854	AR
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	115.1		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Moisture	18.40		%	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Dry Density	97.18		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	18.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plastic Limit	19.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plasticity Index	NP		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-09  
**Client ID:** VC-A-06-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/13/16 10:00  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	1050		mg/kg	500	500.	1	-	10/04/16 10:33	13,-	CM
Total Organic Carbon (Rep2)	816		mg/kg	500	500.	1	-	10/04/16 10:33	13,-	CM
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Gravel	21.5		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Sand	15.7		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Medium Sand	45.2		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Sand	11.8		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Silt Fine	5.50		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Clay Fine	0.300		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Total Fines	5.80		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
<b>General Chemistry - Westborough Lab</b>										
Solids, Ash	85		%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
Nitrogen, Ammonia	2.8	J	mg/kg	8.2	2.1	1	10/04/16 02:30	10/05/16 00:56	121,4500NH3-BH	AT
Phosphorus, Total	110		mg/kg	4.7	1.6	.8	-	10/04/16 11:15	121,4500P-E	SD
Organic Matter, Total	0.70		%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	85.6		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	0.036		%	0.010	NA	1	-	10/05/16 08:43	91,-	AR
% Soot (Rep 2)	0.058		%	0.010	NA	1	-	10/05/16 08:43	91,-	AR
Moisture	14.4		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
Specific Gravity	2.68		-	-	NA	1	-	10/04/16 10:00	12,D854	AR
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	121.0		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Moisture	14.80		%	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Dry Density	105.4		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	20.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plastic Limit	18.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plasticity Index	2.0		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1





**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**SAMPLE RESULTS**

**Lab ID:** L1629122-10  
**Client ID:** VC-A-06-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 09/13/16 10:15  
**Date Received:** 09/15/16  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	ND		mg/kg	500	500.	1	-	10/04/16 11:04	13,-	CM
Total Organic Carbon (Rep2)	ND		mg/kg	500	500.	1	-	10/04/16 11:04	13,-	CM
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Gravel	1.00		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Coarse Sand	4.30		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Medium Sand	51.7		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Fine Sand	33.7		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Silt Fine	8.30		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Clay Fine	1.00		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
% Total Fines	9.30		%	0.100	NA	1	-	10/05/16 13:44	12,D422	SP
<b>General Chemistry - Westborough Lab</b>										
Solids, Ash	82		%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
Nitrogen, Ammonia	ND		mg/kg	8.7	2.2	1	10/04/16 02:30	10/05/16 00:57	121,4500NH3-BH	AT
Phosphorus, Total	120		mg/kg	8.8	2.9	1.5	-	10/04/16 11:15	121,4500P-E	SD
Organic Matter, Total	1.0		%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	85.6		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
% Soot (Rep 1)	0.013		%	0.010	NA	1	-	10/05/16 08:53	91,-	AR
% Soot (Rep 2)	ND		%	0.010	NA	1	-	10/05/16 08:53	91,-	AR
Moisture	14.4		%	0.100	0.100	1	-	09/28/16 16:16	121,2540G	AR
Specific Gravity	2.47		-	-	NA	1	-	10/04/16 10:00	12,D854	AR
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	123.6		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Moisture	18.10		%	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
Dry Density	104.6		lbs/ft3	0.0100	NA	1	-	10/03/16 10:00	12,D7263	AR
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	18.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plastic Limit	18.		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1
Plasticity Index	NP		-	-	NA	1	-	10/05/16 11:18	12,D4318	L1



Project Name: US WIND

Lab Number: L1629122

Project Number: 4167-022

Report Date: 10/18/16

### Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab for sample(s): 01-03,05-10 Batch: WG933238-1</b>									
Solids, Ash	ND	%	0.10	0.10	1	-	09/19/16 08:10	30,2540G	DW
<b>General Chemistry - Westborough Lab for sample(s): 01-03,05-10 Batch: WG933239-1</b>									
Organic Matter, Total	ND	%	0.10	0.10	1	-	09/19/16 08:10	12,D2974	DW
<b>General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG938397-1</b>									
Nitrogen, Ammonia	ND	mg/kg	7.5	0.01	1	10/04/16 02:30	10/05/16 00:43	121,4500NH3-BH	AT
<b>General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG938528-1</b>									
Phosphorus, Total	ND	mg/kg	5.0	1.7	1	-	10/04/16 11:15	121,4500P-E	SD
<b>Total Organic Carbon - Mansfield Lab for sample(s): 01-10 Batch: WG938748-1</b>									
Total Organic Carbon (Rep1)	ND	mg/kg	500	500.	1	-	10/03/16 13:35	13,-	CM
Total Organic Carbon (Rep2)	ND	mg/kg	500	500.	1	-	10/03/16 13:35	13,-	CM
<b>General Chemistry - Mansfield Lab for sample(s): 01-04 Batch: WG938749-1</b>									
% Soot (Rep 1)	ND	%	0.010	NA	1	-	10/03/16 13:25	91,-	CM
% Soot (Rep 2)	ND	%	0.010	NA	1	-	10/03/16 13:25	91,-	CM
<b>General Chemistry - Mansfield Lab for sample(s): 05-10 Batch: WG939414-1</b>									
% Soot (Rep 1)	ND	%	0.010	NA	1	-	10/04/16 16:59	91,-	AR
% Soot (Rep 2)	ND	%	0.010	NA	1	-	10/04/16 16:59	91,-	AR

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG938397-2								
Nitrogen, Ammonia	90		-		83-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG938528-2								
Phosphorus, Total	119		-		52-148	-		20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG938397-4 QC Sample: L1629122-04 Client ID: VC-A-03-DUP												
Nitrogen, Ammonia	ND	470	460	98	-	-	-	-	55-144	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG938528-3 QC Sample: L1629122-04 Client ID: VC-A-03-DUP												
Phosphorus, Total	31.	260	270	92	-	-	-	-	75-125	-	-	20
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG938748-4 WG938748-5 QC Sample: L1629122-04 Client ID: VC-A-03-DUP												
Total Organic Carbon (Rep1)	1110	10000	5780	89	-	5990	90	-	75-125	4	-	25
Total Organic Carbon (Rep2)	942.	10000	6420	93	-	7720	95	-	75-125	18	-	25
General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG938749-4 WG938749-5 QC Sample: L1629122-04 Client ID: VC-A-03-DUP												
% Soot (Rep 1)	ND	0.701	0.719	103	-	0.896	103	-	75-125	22	-	25
% Soot (Rep 2)	ND	1.02	1.05	103	-	0.615	102	-	75-125	52	Q	25
General Chemistry - Mansfield Lab Associated sample(s): 05-10 QC Batch ID: WG939414-4 WG939414-5 QC Sample: L1629119-01 Client ID: MS Sample												
% Soot (Rep 1)	0.317	0.758	1.03	94	-	1.36	101	-	75-125	28	Q	25
% Soot (Rep 2)	0.280	0.66	0.939	100	-	1.17	97	-	75-125	22	-	25

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
<b>General Chemistry - Westborough Lab Associated sample(s): 01-03,05-10 QC Batch ID: WG933238-2 QC Sample: L1629122-01 Client ID: VC-A-01</b>						
Solids, Ash	83.	82	%	1		
<b>General Chemistry - Westborough Lab Associated sample(s): 01-03,05-10 QC Batch ID: WG933239-2 QC Sample: L1629122-01 Client ID: VC-A-01</b>						
Organic Matter, Total	1.6	1.9	%	17		
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG936756-1 QC Sample: L1629122-01 Client ID: VC-A-01</b>						
Solids, Total	83.3	83.6	%	0		10
Moisture	16.7	16.4	%	2		10
<b>Density of Soil - Mansfield Lab Associated sample(s): 01-03,05-10 QC Batch ID: WG938159-1 QC Sample: L1629122-01 Client ID: VC-A-01</b>						
Bulk Density	127.8	126.0	lbs/ft3	1		20
Moisture	19.20	18.90	%	2		20
Dry Density	107.3	106.0	lbs/ft3	1		20
<b>General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG938397-3 QC Sample: L1629122-04 Client ID: VC-A-03-DUP</b>						
Nitrogen, Ammonia	ND	6.2J	mg/kg	NC		20
<b>General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG938528-4 QC Sample: L1629122-04 Client ID: VC-A-03-DUP</b>						
Phosphorus, Total	31.	35	mg/kg	12		20
<b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG938748-3 QC Sample: L1629122-04 Client ID: VC-A-03-DUP</b>						
Total Organic Carbon (Rep1)	1110	ND	mg/kg	NC		25
Total Organic Carbon (Rep2)	942.	ND	mg/kg	NC		25

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>General Chemistry - Mansfield Lab</b> Associated sample(s): 01-04 QC Batch ID: WG938749-3 QC Sample: L1629122-04 Client ID: VC-A-03-DUP					
% Soot (Rep 1)	ND	ND	%	NC	25
% Soot (Rep 2)	ND	ND	%	NC	25
<b>General Chemistry - Mansfield Lab</b> Associated sample(s): 01-03,05-10 QC Batch ID: WG938978-1 QC Sample: L1629122-01 Client ID: VC-A-01					
Specific Gravity	2.48	2.49	-	0	20
<b>Atterberg Limits - Mansfield Lab</b> Associated sample(s): 01-03,05-10 QC Batch ID: WG939078-1 QC Sample: L1629122-01 Client ID: VC-A-01					
Liquid Limit	16.	17	-	6	20
Plastic Limit	15.	22	-	38	Q 20
Plasticity Index	1.0	1.0U	-	0	20
<b>Grain Size Analysis - Mansfield Lab</b> Associated sample(s): 01-03,05-10 QC Batch ID: WG939154-1 QC Sample: L1629122-01 Client ID: VC-A-01					
Cobbles	ND	ND	%	NC	20
% Coarse Gravel	ND	ND	%	NC	20
% Fine Gravel	0.100	ND	%	NC	20
% Coarse Sand	0.600	0.400	%	40	Q 20
% Medium Sand	16.3	16.6	%	2	20
% Fine Sand	59.2	59.0	%	0	20
% Silt Fine	20.2	21.3	%	5	20
% Clay Fine	3.60	2.70	%	29	Q 20
% Total Fines	23.8	24.0	%	1	20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: US WIND

Project Number: 4167-022

Lab Number: L1629122

Report Date: 10/18/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 05-10 QC Batch ID: WG939414-3 QC Sample: L1629119-01 Client ID: DUP Sample					
% Soot (Rep 1)	0.317	0.291	%	9	25
% Soot (Rep 2)	0.280	0.270	%	4	25

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

### S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG938748-2

<b>Parameter</b>	<b>% Recovery</b>	<b>Qual</b>	<b>QC Criteria</b>
Total Organic Carbon (Rep1)	92		75-125
Total Organic Carbon (Rep2)	100		75-125



**Project Name:** US WIND  
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**Lab Number:** L1629122  
**Report Date:** 10/18/16

### S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG938749-2

<b>Parameter</b>	<b>% Recovery</b>	<b>Qual</b>	<b>QC Criteria</b>
% Soot (Rep 1)	110		75-125
% Soot (Rep 2)	116		75-125

**Project Name:** US WIND**Lab Number:** L1629122**Project Number:** 4167-022**Report Date:** 10/18/16**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG939414-2

<b>Parameter</b>	<b>% Recovery</b>	<b>Qual</b>	<b>QC Criteria</b>
% Soot (Rep 1)	108		75-125
% Soot (Rep 2)	108		75-125

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

#### Cooler Information Custody Seal

##### Cooler

A	Absent
D	Absent
B	Absent
C	Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-01A	Glass 500ml/16oz unpreserved	D	N/A	0.6	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-01B	Glass 120ml/4oz unpreserved	D	N/A	0.6	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-01C	Glass 250ml/8oz unpreserved	D	N/A	0.6	Y	Absent	ASH(7),TPHOS-4500(28),NH3-4500(28),ORGMATTER(7)
L1629122-01D	Plastic 8oz unpreserved for Grai	D	N/A	0.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-01D1	Plastic 8oz unpreserved for Grai	D	N/A	0.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()

\*Values in parentheses indicate holding time in days

**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-01E	Plastic 8oz unpreserved for Grai	D	N/A	0.6	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1629122-01F	Amber 120ml unpreserved	D	N/A	0.6	Y	Absent	SUB-PCB-1668()
L1629122-02A	Glass 500ml/16oz unpreserved	D	N/A	0.6	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-02B	Glass 120ml/4oz unpreserved	D	N/A	0.6	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-02C	Glass 250ml/8oz unpreserved	D	N/A	0.6	Y	Absent	ASH(7),TPHOS-4500(28),NH3-4500(28),ORGMATTER(7)
L1629122-02D	Plastic 8oz unpreserved for Grai	D	N/A	0.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-02D1	Plastic 8oz unpreserved for Grai	D	N/A	0.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-02E	Plastic 8oz unpreserved for Grai	D	N/A	0.6	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1629122-02F	Amber 120ml unpreserved	D	N/A	0.6	Y	Absent	SUB-PCB-1668()

\*Values in parentheses indicate holding time in days



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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-03A	Glass 500ml/16oz unpreserved	B	N/A	1.8	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-03B	Glass 120ml/4oz unpreserved	B	N/A	1.8	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-03C	Glass 250ml/8oz unpreserved	B	N/A	1.8	Y	Absent	ASH(7),TPHOS-4500(28),NH3-4500(28),ORGMATTER(7)
L1629122-03D	Plastic 8oz unpreserved for Grai	B	N/A	1.8	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-03D1	Plastic 8oz unpreserved for Grai	B	N/A	1.8	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-03E	Plastic 8oz unpreserved for Grai	B	N/A	1.8	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1629122-03F	Amber 120ml unpreserved	B	N/A	1.8	Y	Absent	SUB-PCB-1668()

\*Values in parentheses indicate holding time in days



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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-04A	Glass 500ml/16oz unpreserved	B	N/A	1.8	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-04A1	Glass 500ml/16oz unpreserved	B	N/A	1.8	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)

\*Values in parentheses indicate holding time in days



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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-04A2	Glass 500ml/16oz unpreserved	B	N/A	1.8	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-04B	Glass 120ml/4oz unpreserved	B	N/A	1.8	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-04B1	Amber 120ml unpreserved	B	N/A	1.8	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-04B2	Amber 120ml unpreserved	B	N/A	1.8	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-04C	Glass 250ml/8oz unpreserved	B	N/A	1.8	Y	Absent	TPHOS-4500(28),NH3-4500(28)
L1629122-04C1	Glass 250ml/8oz unpreserved	B	N/A	1.8	Y	Absent	TPHOS-4500(28),NH3-4500(28)
L1629122-04C2	Glass 250ml/8oz unpreserved	B	N/A	1.8	Y	Absent	TPHOS-4500(28),NH3-4500(28)
L1629122-04D	Plastic 8oz unpreserved for Grai	B	N/A	1.8	Y	Absent	NH3-4500(28)
L1629122-04D1	Plastic 8oz unpreserved for Grai	B	N/A	1.8	Y	Absent	NH3-4500(28)
L1629122-04D2	Plastic 8oz unpreserved for Grai	B	N/A	1.8	Y	Absent	NH3-4500(28)
L1629122-04E	Plastic 8oz unpreserved for Grai	B	N/A	1.8	Y	Absent	TPHOS-4500(28)
L1629122-04E1	Plastic 8oz unpreserved for Grai	B	N/A	1.8	Y	Absent	TPHOS-4500(28)
L1629122-04E2	Plastic 8oz unpreserved for Grai	B	N/A	1.8	Y	Absent	TPHOS-4500(28)
L1629122-04F	Amber 120ml unpreserved	B	N/A	1.8	Y	Absent	SUB-PCB-1668()
L1629122-04F1	Amber 120ml unpreserved	B	N/A	1.8	Y	Absent	SUB-PCB-1668()
L1629122-04F2	Amber 120ml unpreserved	B	N/A	1.8	Y	Absent	SUB-PCB-1668()
L1629122-04G	Glass 250ml/8oz unpreserved	B	N/A	1.8	Y	Absent	TPHOS-4500(28)
L1629122-04G1	Glass 250ml/8oz unpreserved	B	N/A	1.8	Y	Absent	TPHOS-4500(28)
L1629122-04G2	Glass 250ml/8oz unpreserved	B	N/A	1.8	Y	Absent	TPHOS-4500(28)

\*Values in parentheses indicate holding time in days



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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-05A	Glass 500ml/16oz unpreserved	C	N/A	1.8	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-05B	Glass 120ml/4oz unpreserved	C	N/A	1.8	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-05C	Glass 250ml/8oz unpreserved	C	N/A	1.8	Y	Absent	ASH(7),TPHOS-4500(28),NH3-4500(28),ORGMATTER(7)
L1629122-05D	Plastic 8oz unpreserved for Grai	C	N/A	1.8	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-05D1	Plastic 8oz unpreserved for Grai	C	N/A	1.8	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-05E	Plastic 8oz unpreserved for Grai	C	N/A	1.8	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1629122-05F	Amber 120ml unpreserved	C	N/A	1.8	Y	Absent	SUB-PCB-1668()

\*Values in parentheses indicate holding time in days





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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-06A	Glass 500ml/16oz unpreserved	D	N/A	1.6	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-06B	Glass 120ml/4oz unpreserved	D	N/A	1.6	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-06C	Glass 250ml/8oz unpreserved	D	N/A	1.6	Y	Absent	ASH(7),TPHOS-4500(28),NH3-4500(28),ORGMATTER(7)
L1629122-06D	Plastic 8oz unpreserved for Grai	D	N/A	1.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-06D1	Plastic 8oz unpreserved for Grai	D	N/A	1.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-06E	Plastic 8oz unpreserved for Grai	D	N/A	1.6	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1629122-06F	Amber 120ml unpreserved	D	N/A	1.6	Y	Absent	SUB-PCB-1668()

\*Values in parentheses indicate holding time in days



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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-07A	Glass 500ml/16oz unpreserved	C	N/A	1.8	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-07B	Glass 120ml/4oz unpreserved	C	N/A	1.8	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-07C	Glass 250ml/8oz unpreserved	C	N/A	1.8	Y	Absent	ASH(7),TPHOS-4500(28),NH3-4500(28),ORGMATTER(7)
L1629122-07D	Plastic 8oz unpreserved for Grai	C	N/A	1.8	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-07D1	Plastic 8oz unpreserved for Grai	C	N/A	1.8	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-07E	Plastic 8oz unpreserved for Grai	C	N/A	1.8	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1629122-07F	Amber 120ml unpreserved	C	N/A	1.8	Y	Absent	SUB-PCB-1668()

\*Values in parentheses indicate holding time in days



**Project Name:** US WIND  
**Project Number:** 4167-022

**Lab Number:** L1629122  
**Report Date:** 10/18/16

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-08A	Glass 500ml/16oz unpreserved	C	N/A	1.8	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-08B	Glass 120ml/4oz unpreserved	C	N/A	1.8	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-08C	Glass 250ml/8oz unpreserved	C	N/A	1.8	Y	Absent	ASH(7),TPHOS-4500(28),NH3-4500(28),ORGMATTER(7)
L1629122-08D	Plastic 8oz unpreserved for Grai	C	N/A	1.8	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-08D1	Plastic 8oz unpreserved for Grai	C	N/A	1.8	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-08E	Plastic 8oz unpreserved for Grai	C	N/A	1.8	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1629122-08F	Amber 120ml unpreserved	C	N/A	1.8	Y	Absent	SUB-PCB-1668()

\*Values in parentheses indicate holding time in days



**Project Name:** US WIND  
**Project Number:** 4167-022

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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-09A	Glass 500ml/16oz unpreserved	A	N/A	1.6	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-09B	Glass 120ml/4oz unpreserved	A	N/A	1.6	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-09C	Glass 250ml/8oz unpreserved	A	N/A	1.6	Y	Absent	ASH(7),TPHOS-4500(28),NH3-4500(28),ORGMATTER(7)
L1629122-09D	Plastic 8oz unpreserved for Grai	A	N/A	1.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-09D1	Plastic 8oz unpreserved for Grai	A	N/A	1.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-09E	Plastic 8oz unpreserved for Grai	A	N/A	1.6	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1629122-09F	Amber 120ml unpreserved	A	N/A	1.6	Y	Absent	SUB-PCB-1668()

\*Values in parentheses indicate holding time in days



**Project Name:** US WIND  
**Project Number:** 4167-022

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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1629122-10A	Glass 500ml/16oz unpreserved	A	N/A	1.6	Y	Absent	A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-SB-6020T(180),A2-TOC-LK-2REPS-PPM(14),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-SOOT(28),A2-CR-6020T(180),A2-TL-6020T(180),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-NJ-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-NJ-PEST-8081-LOW(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1629122-10B	Glass 120ml/4oz unpreserved	A	N/A	1.6	Y	Absent	SUB-DIOXIN-1613B(365)
L1629122-10C	Glass 250ml/8oz unpreserved	A	N/A	1.6	Y	Absent	ASH(7),TPHOS-4500(28),NH3-4500(28),ORGMATTER(7)
L1629122-10D	Plastic 8oz unpreserved for Grai	A	N/A	1.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-10D1	Plastic 8oz unpreserved for Grai	A	N/A	1.6	Y	Absent	A2-DENSITY-SOIL(),A2-ATTERBERG(),A2-SPECGRAV()
L1629122-10E	Plastic 8oz unpreserved for Grai	A	N/A	1.6	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1629122-10F	Amber 120ml unpreserved	A	N/A	1.6	Y	Absent	SUB-PCB-1668()

\*Values in parentheses indicate holding time in days



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## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** DU Report with 'J' Qualifiers



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#### Data Qualifiers

- reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
  - D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
  - E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
  - G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
  - H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
  - I** - The lower value for the two columns has been reported due to obvious interference.
  - M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
  - NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
  - P** - The RPD between the results for the two columns exceeds the method-specified criteria.
  - Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
  - R** - Analytical results are from sample re-analysis.
  - RE** - Analytical results are from sample re-extraction.
  - S** - Analytical results are from modified screening analysis.
  - J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
  - ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

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## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 12 Annual Book of ASTM Standards. (American Society for Testing and Materials) ASTM International.
- 13 Determination of Total Organic Carbon in Sediment. U.S. EPA, Region II. July 27, 1988.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
- 91 Analysis of Soot following ES&T publications by Accardi-Dey and Gschwend, 2003; and Gustafsson (et. al.), 1997.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

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We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

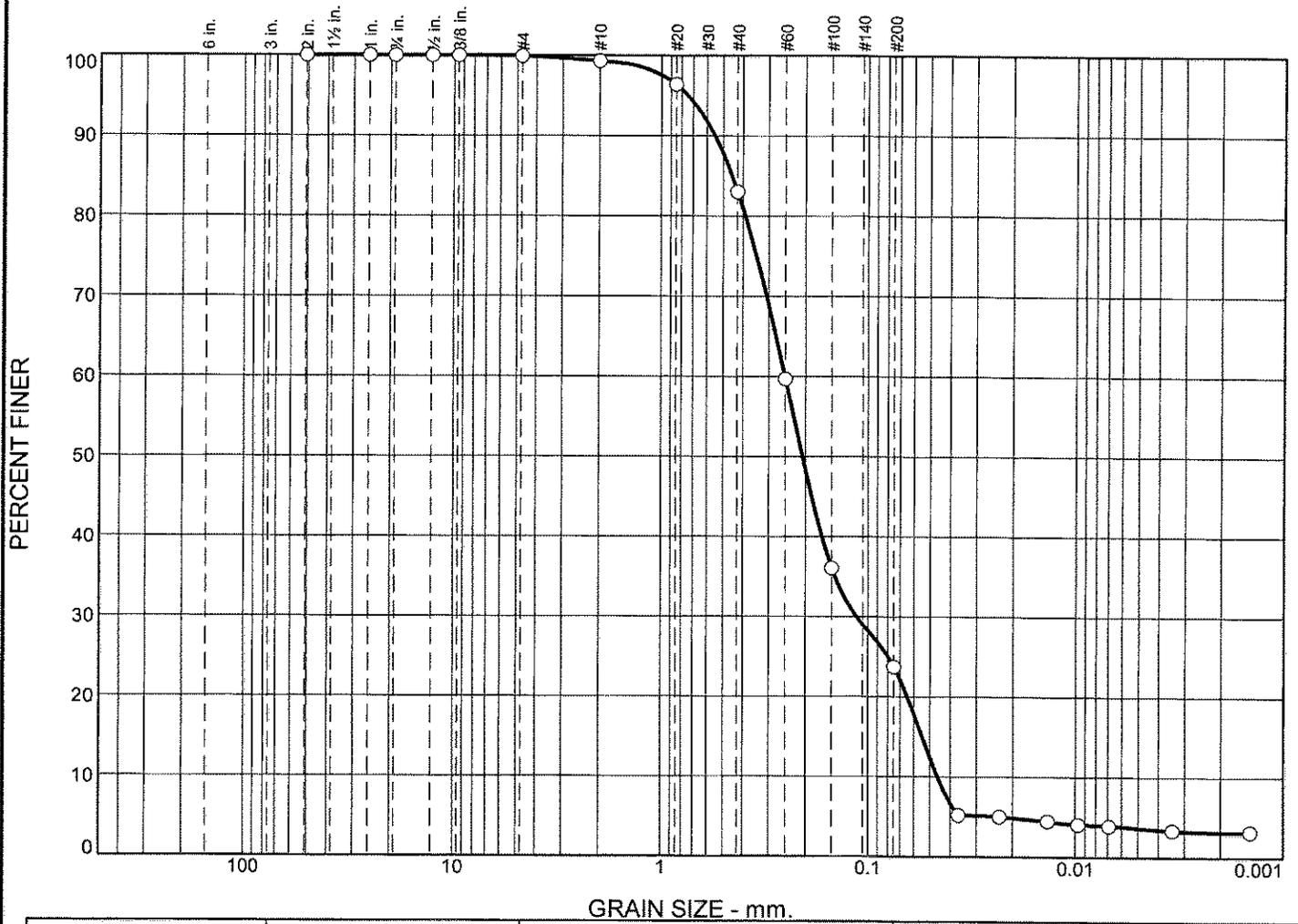




# **ASTM D422-63**

## **GRAIN SIZE ANALYSIS**

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.6	16.3	59.2	20.2	3.6

LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
		0.4524	0.2516	0.2073	0.1139	0.0547	0.0462	1.12	5.45

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b> ○ <b>Source of Sample:</b> VC-A-01 <b>Sample Number:</b> L1629122-01	<b>Client:</b>  <b>Remarks:</b>  Figure
<b>Alpha Analytical</b> <b>Mansfield, MA</b>	

## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-01

Sample Number: L1629122-01

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 106.89  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
106.89	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	0.00	0.00	100.0
		.375"	0.00	0.00	100.0
		#4	0.08	0.00	99.9
		#10	0.68	0.00	99.3
		#20	3.13	0.00	96.4
		#40	14.27	0.00	83.0
		#60	24.94	0.00	59.7
		#100	25.25	0.00	36.1
		#200	13.14	0.00	23.8

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 23.8  
 Weight of hydrometer sample = 106.89  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 1  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.479  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0130	1.0140	0.0144	13.0	12.9	0.0365	5.2
5.00	20.0	1.0125	1.0135	0.0144	12.5	13.0	0.0232	5.0
15.00	20.0	1.0110	1.0120	0.0144	11.0	13.4	0.0136	4.5
30.00	20.0	1.0100	1.0110	0.0144	10.0	13.6	0.0097	4.1
60.00	20.0	1.0095	1.0105	0.0144	9.5	13.8	0.0069	3.9
250.00	20.0	1.0080	1.0090	0.0144	8.0	14.2	0.0034	3.3
1440.00	20.0	1.0075	1.0085	0.0144	7.5	14.3	0.0014	3.2

## Fractional Components

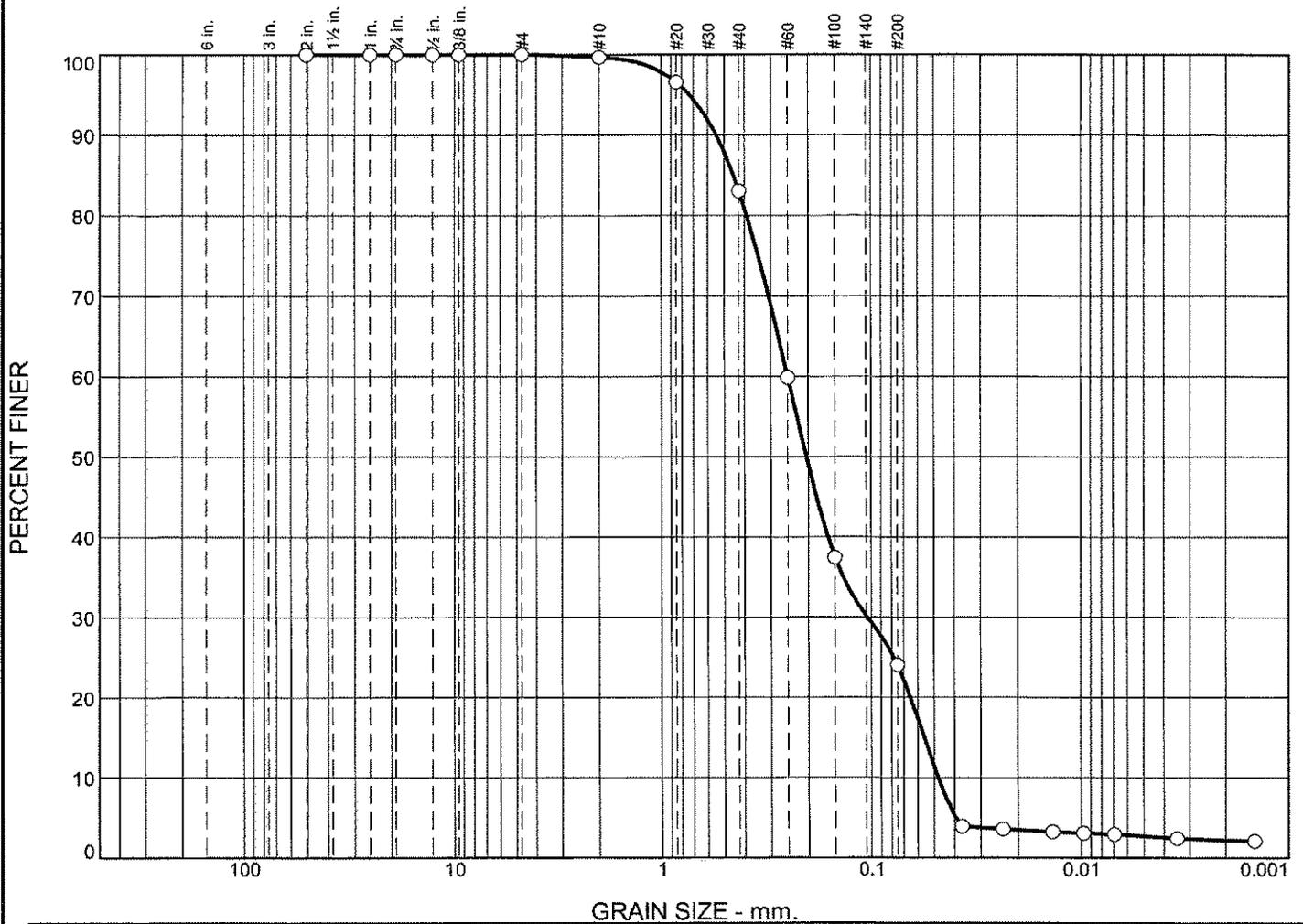
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	0.6	16.3	59.2	76.1	20.2	3.6	23.8

D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0462	0.0547	0.0647	0.1139	0.2073	0.2516	0.3905	0.4524	0.5489	0.7444

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.06	5.45	1.12

Alpha Analytical

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.4	16.6	59.0	21.3	2.7

LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
		0.4516	0.2507	0.2046	0.1046	0.0560	0.0480	0.91	5.22

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b> ○ <b>Source of Sample:</b> VC-A-01 <b>Sample Number:</b> WG939154-1	<b>Client:</b>  <b>Alpha Analytical</b> <b>Mansfield, MA</b>	<b>Remarks:</b>  <b>Figure</b>
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## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-01

Sample Number: WG939154-1

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 123.82  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
123.82	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	0.00	0.00	100.0
		.375"	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.44	0.00	99.6
		#20	3.79	0.00	96.6
		#40	16.77	0.00	83.0
		#60	28.71	0.00	59.9
		#100	27.75	0.00	37.4
		#200	16.62	0.00	24.0

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 24.0  
 Weight of hydrometer sample = 123.82  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.479  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0120	1.0120	0.0144	12.0	13.1	0.0369	3.9
5.00	20.0	1.0110	1.0110	0.0144	11.0	13.4	0.0236	3.6
15.00	20.0	1.0100	1.0100	0.0144	10.0	13.6	0.0137	3.2
30.00	20.0	1.0095	1.0095	0.0144	9.5	13.8	0.0098	3.1
60.00	20.0	1.0090	1.0090	0.0144	9.0	13.9	0.0069	2.9
250.00	20.0	1.0075	1.0075	0.0144	7.5	14.3	0.0034	2.4
1440.00	20.0	1.0065	1.0065	0.0144	6.5	14.6	0.0014	2.1

## Fractional Components

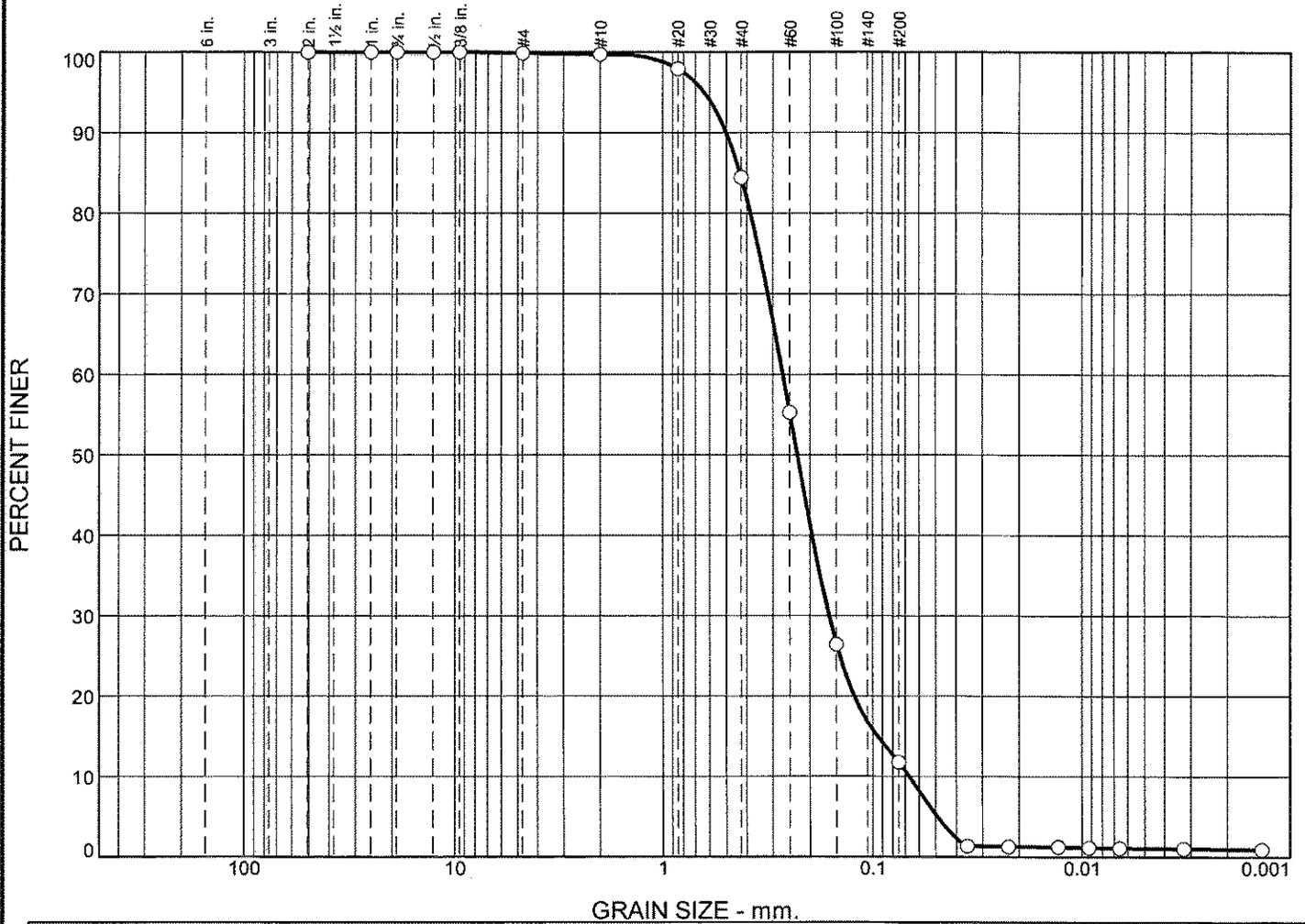
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.4	16.6	59.0	76.0	21.3	2.7	24.0

D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0480	0.0560	0.0651	0.1046	0.2046	0.2507	0.3905	0.4516	0.5460	0.7329

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.04	5.22	0.91

Alpha Analytical

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.1	15.3	72.6	10.8	1.0

LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
		0.4313	0.2695	0.2301	0.1626	0.0948	0.0669	1.47	4.03

Material Description	USCS	AASHTO

Project No.	Client:	Remarks:
Project:		
Source of Sample: VC-A-02	Sample Number: L1629122-02	
Alpha Analytical		Figure
Mansfield, MA		

## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-02

Sample Number: L1629122-02

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 147.09  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
147.09	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	0.00	0.00	100.0
		.375"	0.00	0.00	100.0
		#4	0.23	0.00	99.8
		#10	0.20	0.00	99.7
		#20	2.65	0.00	97.9
		#40	19.83	0.00	84.4
		#60	42.88	0.00	55.3
		#100	42.45	0.00	26.4
		#200	21.54	0.00	11.8

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 11.8  
 Weight of hydrometer sample = 147.09  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 1  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.688  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0095	1.0105	0.0135	9.5	13.8	0.0354	1.3
5.00	20.0	1.0090	1.0100	0.0135	9.0	13.9	0.0225	1.3
15.00	20.0	1.0085	1.0095	0.0135	8.5	14.0	0.0131	1.2
30.00	20.0	1.0080	1.0090	0.0135	8.0	14.2	0.0093	1.1
60.00	20.0	1.0075	1.0085	0.0135	7.5	14.3	0.0066	1.1
250.00	20.0	1.0070	1.0080	0.0135	7.0	14.4	0.0032	1.0
1440.00	20.0	1.0060	1.0070	0.0135	6.0	14.7	0.0014	0.9

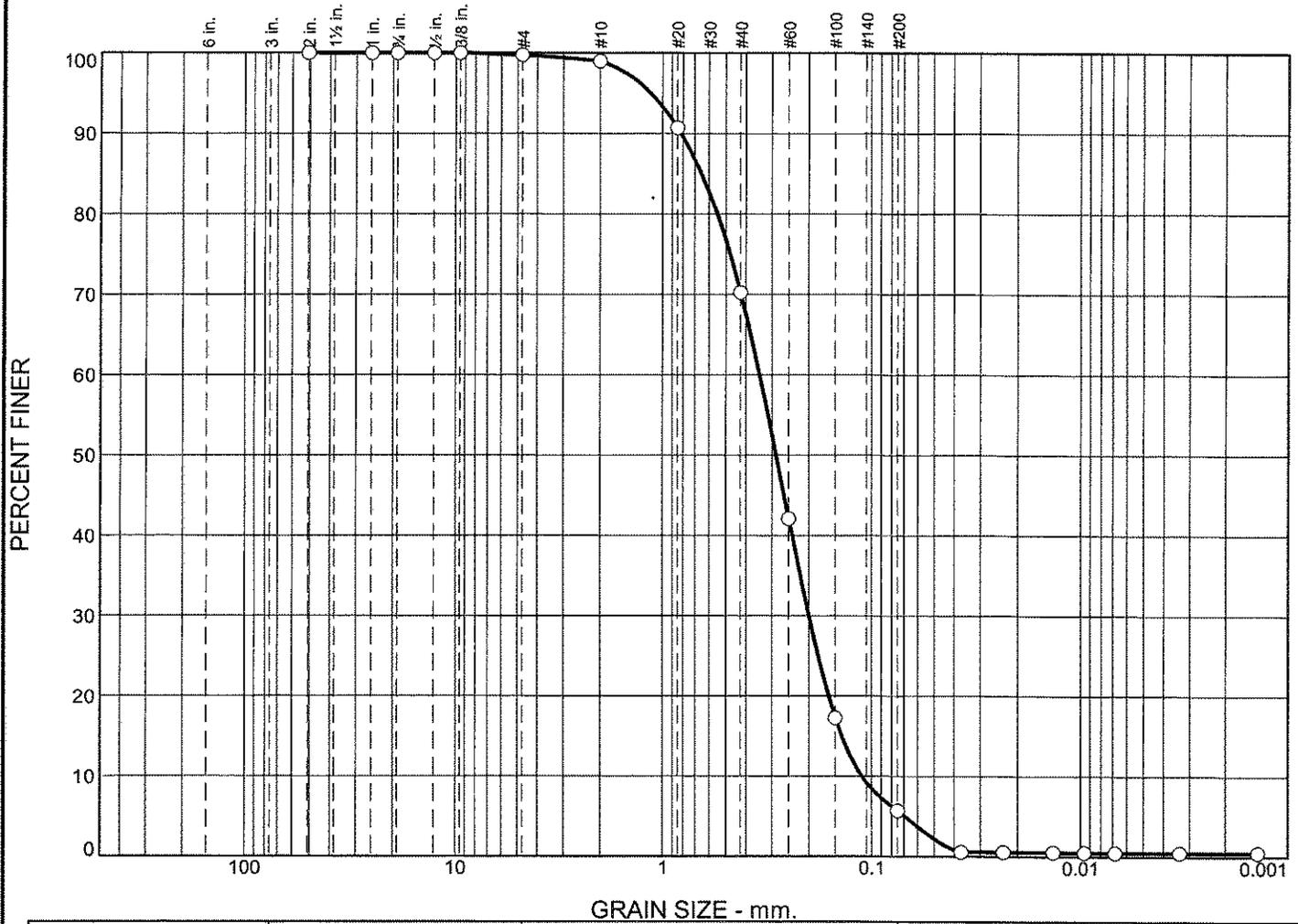
## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	0.1	15.3	72.6	88.0	10.8	1.0	11.8

D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0669	0.0948	0.1232	0.1626	0.2301	0.2695	0.3842	0.4313	0.5015	0.6366

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.14	4.03	1.47

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.7	28.8	64.5	5.2	0.5

LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
		0.6528	0.3449	0.2875	0.2004	0.1398	0.1116	1.04	3.09

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b> ○ <b>Source of Sample:</b> VC-A-03 <b>Sample Number:</b> L1629122-03	<b>Client:</b>  <b>Remarks:</b>  <b>Figure</b>
<b>Alpha Analytical</b> <b>Mansfield, MA</b>	



## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-03

Sample Number: L1629122-03

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 138.31  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
138.31	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	0.00	0.00	100.0
		.375"	0.00	0.00	100.0
		#4	0.38	0.00	99.7
		#10	1.03	0.00	99.0
		#20	11.46	0.00	90.7
		#40	28.30	0.00	70.2
		#60	38.93	0.00	42.1
		#100	34.36	0.00	17.2
		#200	15.96	0.00	5.7

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 5.7

Weight of hydrometer sample = 138.31

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 1

Meniscus correction only = 0.0

Specific gravity of solids = 2.615

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0070	1.0080	0.0138	7.0	14.4	0.0371	0.5
5.00	20.0	1.0070	1.0080	0.0138	7.0	14.4	0.0234	0.5
15.00	20.0	1.0070	1.0080	0.0138	7.0	14.4	0.0135	0.5
30.00	20.0	1.0065	1.0075	0.0138	6.5	14.6	0.0096	0.5
60.00	20.0	1.0060	1.0070	0.0138	6.0	14.7	0.0068	0.5
250.00	20.0	1.0060	1.0070	0.0138	6.0	14.7	0.0033	0.5
1440.00	20.0	1.0060	1.0070	0.0138	6.0	14.7	0.0014	0.5

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.3	0.3	0.7	28.8	64.5	94.0	5.2	0.5	5.7

D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.1116	0.1398	0.1615	0.2004	0.2875	0.3449	0.5491	0.6528	0.8185	1.1401

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.53	3.09	1.04

Alpha Analytical

# Particle Size Distribution Report



GRAIN SIZE - mm.

%	+3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.2	2.3	27.2	24.3	37.2	7.8

	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○			0.7251	0.3200	0.1937	0.0540	0.0398	0.0183	0.50	17.48

Material Description	USCS	AASHTO
○		

<b>Project No.</b> <b>Project:</b>	<b>Client:</b>  ○ <b>Source of Sample:</b> VC-A-04-S1 <b>Sample Number:</b> L1629122-05	<b>Remarks:</b>
<b>Alpha Analytical</b>  <b>Mansfield, MA</b>		<b>Figure</b>

## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-04-S1

Sample Number: L1629122-05

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 68.07  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
68.07	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	0.00	0.00	100.0
		.375"	0.00	0.00	100.0
		#4	0.79	0.00	98.8
		#10	1.59	0.00	96.5
		#20	5.48	0.00	88.5
		#40	13.05	0.00	69.3
		#60	10.93	0.00	53.2
		#100	3.85	0.00	47.6
		#200	1.76	0.00	45.0

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 45.0  
 Weight of hydrometer sample = 68.07  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 1  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.651  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0100	1.0110	0.0136	10.0	13.6	0.0356	11.6
5.00	20.0	1.0090	1.0100	0.0136	9.0	13.9	0.0228	10.6
15.00	20.0	1.0080	1.0090	0.0136	8.0	14.2	0.0133	9.5
30.00	20.0	1.0080	1.0090	0.0136	8.0	14.2	0.0094	9.5
60.00	20.0	1.0070	1.0080	0.0136	7.0	14.4	0.0067	8.5
250.00	20.0	1.0060	1.0070	0.0136	6.0	14.7	0.0033	7.4
1440.00	20.0	1.0055	1.0065	0.0136	5.5	14.8	0.0014	6.9

## Fractional Components

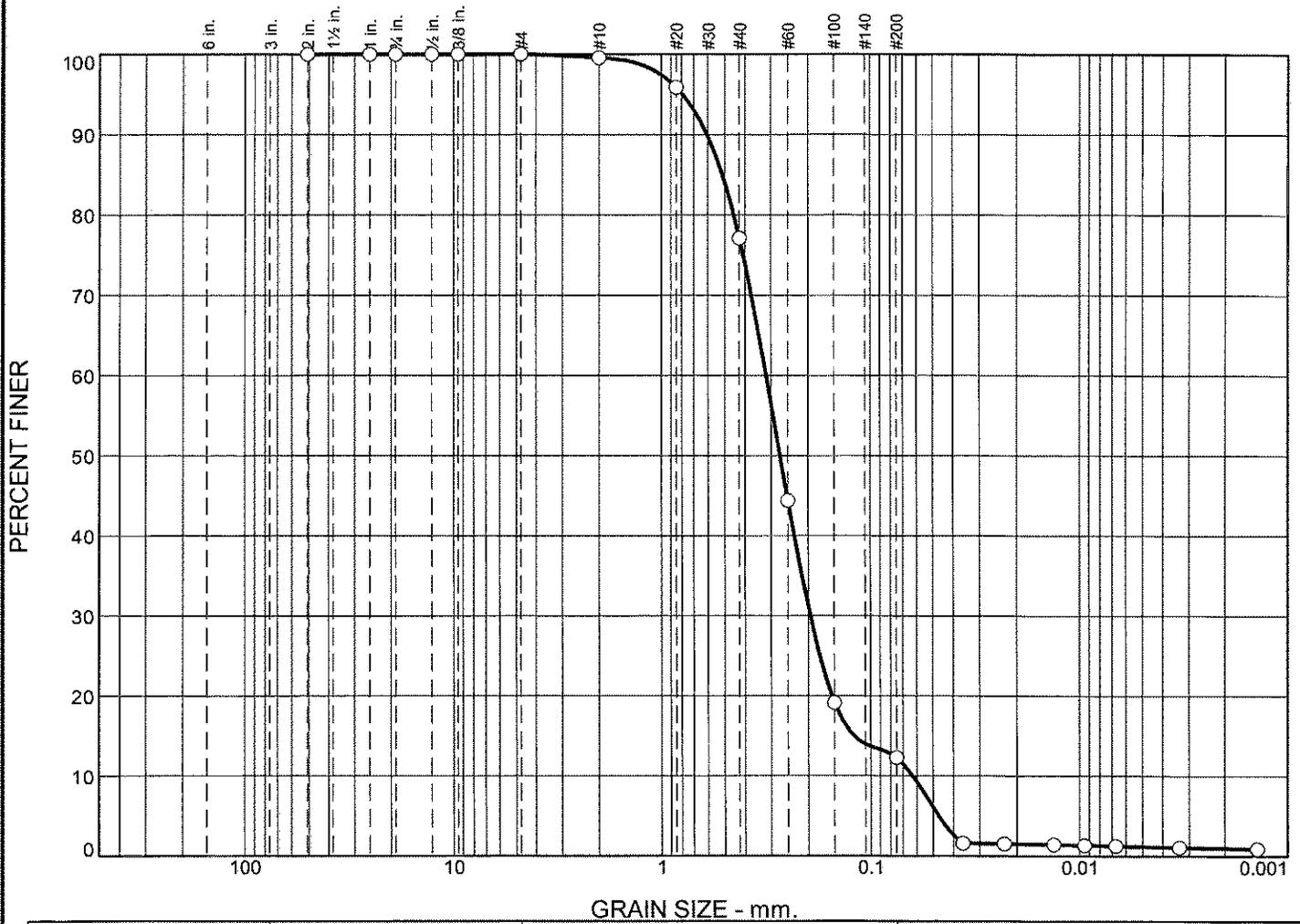
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.2	1.2	2.3	27.2	24.3	53.8	37.2	7.8	45.0

D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0183	0.0398	0.0446	0.0540	0.1937	0.3200	0.5998	0.7251	0.9267	1.4639

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.25	17.48	0.50

Alpha Analytical

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	22.4	64.8	11.1	1.2

LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
		0.5130	0.3175	0.2725	0.1954	0.1207	0.0629	1.91	5.05

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b>	<b>Client:</b>  <b>Source of Sample:</b> VC-A-04-S2 <b>Sample Number:</b> L1629122-06	<b>Remarks:</b>  <div style="text-align: center; border: 1px solid black; padding: 5px;"> <b>Alpha Analytical</b>  <b>Mansfield, MA</b> </div>
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## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-04-S2

Sample Number: L1629122-06

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 110.78  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
110.78	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	0.00	0.00	100.0
		.375"	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.51	0.00	99.5
		#20	4.06	0.00	95.9
		#40	20.81	0.00	77.1
		#60	36.20	0.00	44.4
		#100	28.01	0.00	19.1
		#200	7.61	0.00	12.3

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 12.3  
 Weight of hydrometer sample = 110.78  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.633  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0090	1.0090	0.0137	9.0	13.9	0.0362	1.6
5.00	20.0	1.0085	1.0085	0.0137	8.5	14.0	0.0230	1.5
15.00	20.0	1.0080	1.0080	0.0137	8.0	14.2	0.0133	1.4
30.00	20.0	1.0075	1.0075	0.0137	7.5	14.3	0.0095	1.3
60.00	20.0	1.0070	1.0070	0.0137	7.0	14.4	0.0067	1.2
250.00	20.0	1.0060	1.0060	0.0137	6.0	14.7	0.0033	1.1
1440.00	20.0	1.0050	1.0050	0.0137	5.0	15.0	0.0014	0.9

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.5	22.4	64.8	87.7	11.1	1.2	12.3

D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0629	0.1207	0.1544	0.1954	0.2725	0.3175	0.4522	0.5130	0.6067	0.7925

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.37	5.05	1.91

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## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-04-S3

Sample Number: L1629122-07

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 72.77  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
72.77	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	0.00	0.00	100.0
		.375"	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.42	0.00	99.4
		#20	3.79	0.00	94.2
		#40	4.53	0.00	88.0
		#60	5.41	0.00	80.6
		#100	4.27	0.00	74.7
		#200	2.03	0.00	71.9

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 71.9  
 Weight of hydrometer sample = 72.77  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.716  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0110	1.0110	0.0134	11.0	13.4	0.0346	17.2
5.00	20.0	1.0095	1.0095	0.0134	9.5	13.8	0.0222	14.8
15.00	20.0	1.0075	1.0075	0.0134	7.5	14.3	0.0131	11.7
30.00	20.0	1.0060	1.0060	0.0134	6.0	14.7	0.0094	9.3
60.00	20.0	1.0050	1.0050	0.0134	5.0	15.0	0.0067	7.8
250.00	20.0	1.0040	1.0040	0.0134	4.0	15.2	0.0033	6.2
1440.00	20.0	1.0030	1.0030	0.0134	3.0	15.5	0.0014	4.7

## Fractional Components

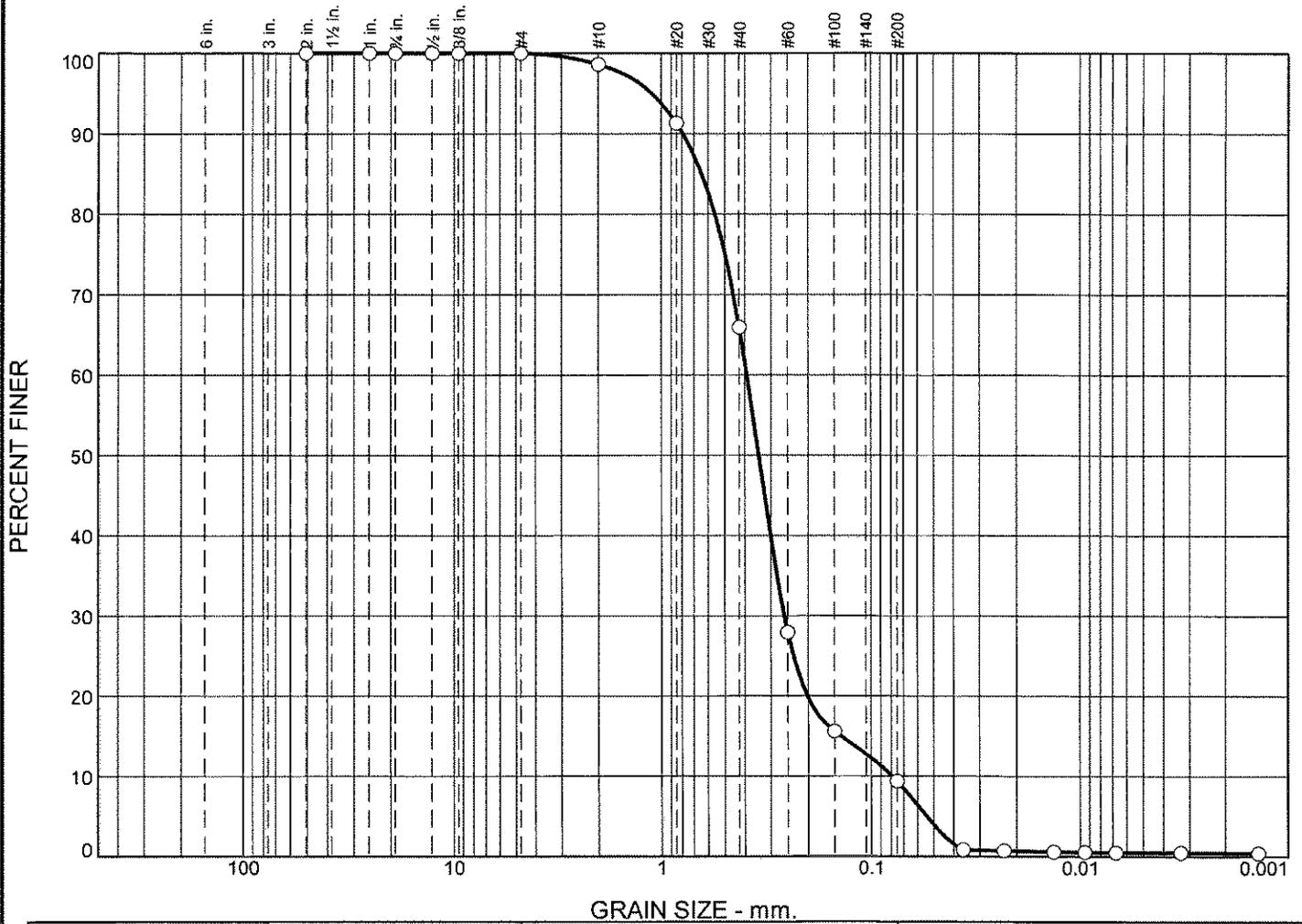
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.6	11.4	16.1	28.1	64.9	7.0	71.9

D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0105	0.0230	0.0369	0.0431	0.0548	0.0620	0.2406	0.3346	0.5150	0.9423

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.54	5.93	2.87

Alpha Analytical

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.4	32.7	56.5	8.9	0.5

LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
		0.6428	0.3906	0.3429	0.2595	0.1399	0.0791	2.18	4.94

Material Description	USCS	AASHTO

Project No. _____ Client: _____ Project: _____ Source of Sample: VC-A-05      Sample Number: L1629122-08	Remarks:   
Alpha Analytical Mansfield, MA	



## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-05

Sample Number: L1629122-08

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 125.88  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
125.88	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	0.00	0.00	100.0
		.375"	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	1.75	0.00	98.6
		#20	9.19	0.00	91.3
		#40	31.95	0.00	65.9
		#60	47.84	0.00	27.9
		#100	15.51	0.00	15.6
		#200	7.83	0.00	9.4

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 9.4

Weight of hydrometer sample = 125.88

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.708

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0070	1.0070	0.0134	7.0	14.4	0.0360	0.8
5.00	20.0	1.0060	1.0060	0.0134	6.0	14.7	0.0230	0.7
15.00	20.0	1.0050	1.0050	0.0134	5.0	15.0	0.0134	0.6
30.00	20.0	1.0045	1.0045	0.0134	4.5	15.1	0.0095	0.5
60.00	20.0	1.0040	1.0040	0.0134	4.0	15.2	0.0068	0.5
250.00	20.0	1.0040	1.0040	0.0134	4.0	15.2	0.0033	0.5
1440.00	20.0	1.0035	1.0035	0.0134	3.5	15.4	0.0014	0.4

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	1.4	32.7	56.5	90.6	8.9	0.5	9.4

D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0791	0.1399	0.2026	0.2595	0.3429	0.3906	0.5563	0.6428	0.7910	1.1129

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.67	4.94	2.18

Alpha Analytical



## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-06-S1

Sample Number: L1629122-09

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 114.83  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
114.83	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	8.80	0.00	92.3
		.375"	6.07	0.00	87.1
		#4	9.77	0.00	78.5
		#10	18.05	0.00	62.8
		#20	28.10	0.00	38.4
		#40	23.78	0.00	17.6
		#60	9.00	0.00	9.8
		#100	3.21	0.00	7.0
		#200	1.34	0.00	5.8

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 5.8  
 Weight of hydrometer sample = 114.83  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.678  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0055	1.0055	0.0135	5.5	14.8	0.0369	0.4
5.00	20.0	1.0060	1.0060	0.0135	6.0	14.7	0.0232	0.5
15.00	20.0	1.0060	1.0060	0.0135	6.0	14.7	0.0134	0.5
30.00	20.0	1.0045	1.0045	0.0135	4.5	15.1	0.0096	0.4
60.00	20.0	1.0040	1.0040	0.0135	4.0	15.2	0.0068	0.3
250.00	20.0	1.0035	1.0035	0.0135	3.5	15.4	0.0034	0.3
1440.00	20.0	1.0030	1.0030	0.0135	3.0	15.5	0.0014	0.2

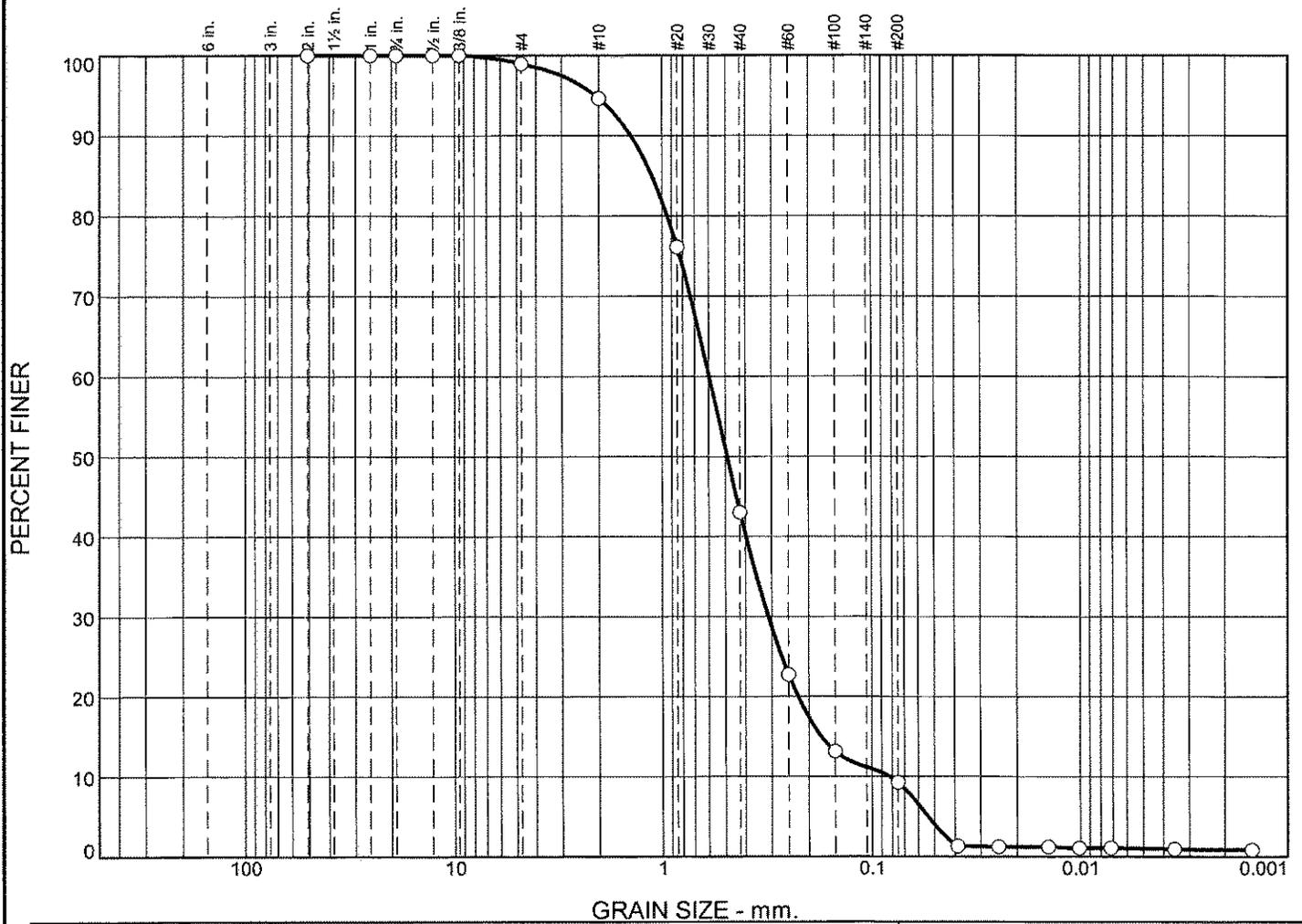
## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	21.5	21.5	15.7	45.2	11.8	72.7	5.5	0.3	5.8

D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.2553	0.3728	0.4688	0.6581	1.2377	1.7827	5.3550	8.2332	11.3200	14.2939

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
3.73	6.98	0.95

# Particle Size Distribution Report



GRAIN SIZE - mm.

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.0	4.3	51.7	33.7	8.3	1.0

	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
⊗			1.1192	0.5976	0.4903	0.3120	0.1749	0.0821	1.98	7.28

Material Description	USCS	AASHTO
○		

Project No.	Client:	Remarks:
Project:		
○ Source of Sample: VC-A-06-S2	Sample Number: L1629122-10	
<b>Alpha Analytical</b>		
Mansfield, MA		Figure

## GRAIN SIZE DISTRIBUTION TEST DATA

10/5/2016

Location: VC-A-06-S2

Sample Number: L1629122-10

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 101.27  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
101.27	0.00	2"	0.00	0.00	100.0
		1"	0.00	0.00	100.0
		.75"	0.00	0.00	100.0
		.5"	0.00	0.00	100.0
		.375"	0.00	0.00	100.0
		#4	1.06	0.00	99.0
		#10	4.35	0.00	94.7
		#20	18.76	0.00	76.1
		#40	33.52	0.00	43.0
		#60	20.57	0.00	22.7
		#100	9.72	0.00	13.1
		#200	3.90	0.00	9.3

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 9.3

Weight of hydrometer sample = 101.27

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 1

Meniscus correction only = 0.0

Specific gravity of solids = 2.466

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	20.0	1.0075	1.0085	0.0145	7.5	14.3	0.0387	1.3
5.00	20.0	1.0070	1.0080	0.0145	7.0	14.4	0.0246	1.2
15.00	20.0	1.0070	1.0080	0.0145	7.0	14.4	0.0142	1.2
30.00	20.0	1.0060	1.0070	0.0145	6.0	14.7	0.0101	1.1
60.00	20.0	1.0060	1.0070	0.0145	6.0	14.7	0.0072	1.1
250.00	20.0	1.0050	1.0060	0.0145	5.0	15.0	0.0035	0.9
1440.00	20.0	1.0045	1.0055	0.0145	4.5	15.1	0.0015	0.8

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.0	1.0	4.3	51.7	33.7	89.7	8.3	1.0	9.3

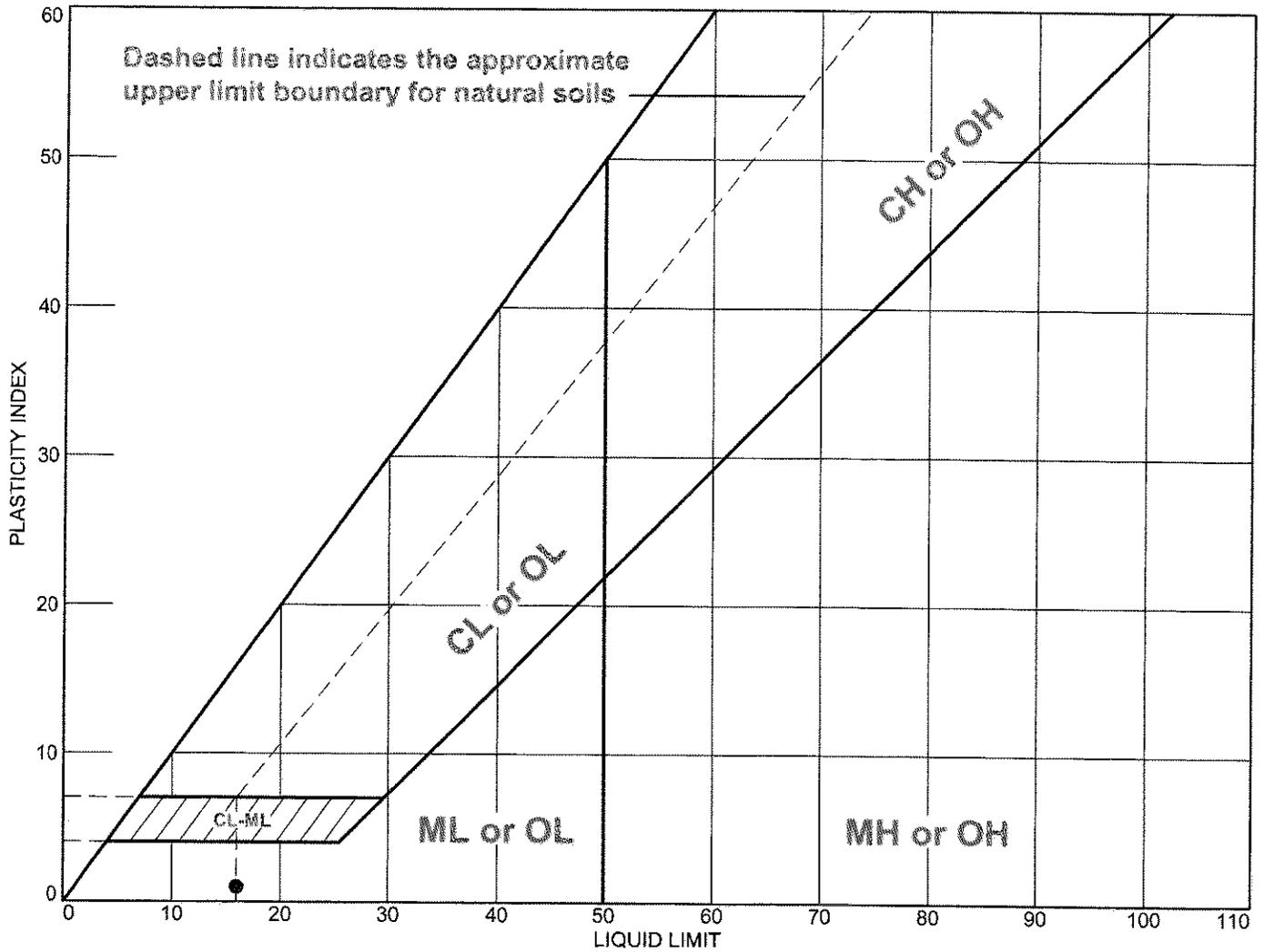
D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0821	0.1749	0.2256	0.3120	0.4903	0.5976	0.9458	1.1192	1.4087	2.0743

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.17	7.28	1.98

Alpha Analytical

**ASTM D4318-10**  
**Liquid Limit, Plastic Limit and Plasticity Index of Soils**

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	16	15	1	83.0	23.8	SM

Project No.                      Client:

Project:

● Source of Sample: VC-A-01                      Sample Number: L1629122-01

**Alpha Analytical**

**Mansfield, MA**

Remarks:

**Figure**

**LIQUID AND PLASTIC LIMIT TEST DATA**

10/13/2016

Location: VC-A-01

Sample Number: L1629122-01

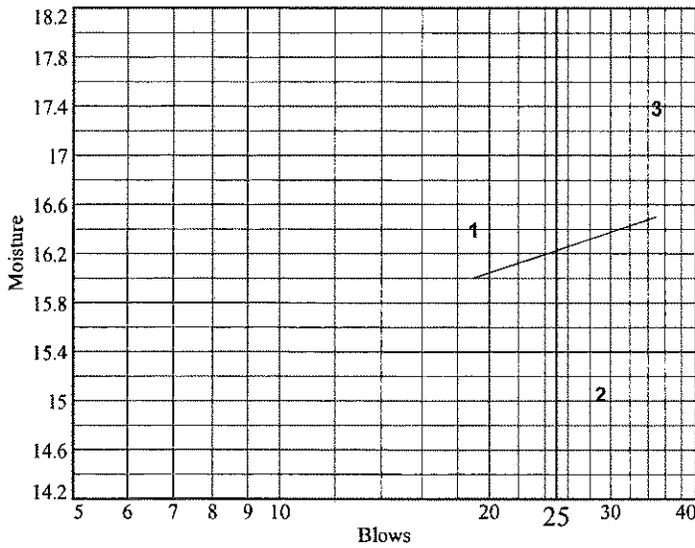
%<#40: 83.0

%<#200: 23.8

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	9.21	10.15	5.52			
Dry+Tare	8.08	8.98	4.88			
Tare	1.19	1.21	1.2			
# Blows	19	29	35			
Moisture	16.4	15.1	17.4			



Liquid Limit= 16  
 Plastic Limit= 15  
 Plasticity Index= 1  
 Natural Moisture= 20.1  
 Liquidity Index= 5.1

**Plastic Limit Data**

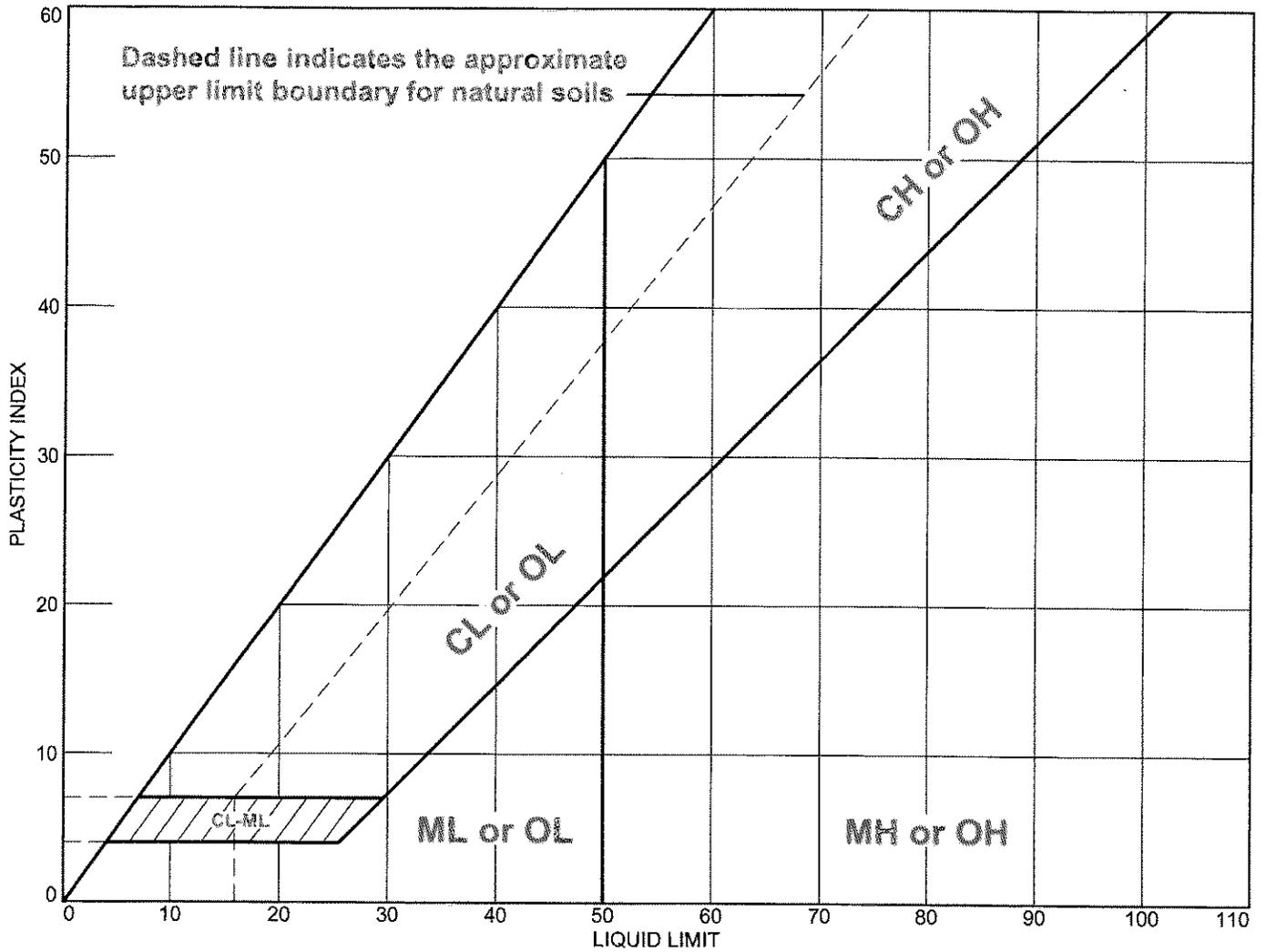
Run No.	1	2	3	4
Wet+Tare	5.02			
Dry+Tare	4.52			
Tare	1.19			
Moisture	15.0			

**Natural Moisture Data**

Wet+Tare	Dry+Tare	Tare	Moisture
12.67	10.75	1.18	20.1



# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	17	22	NP	83.0	24.0	SM

Project No.                      Client:

Project:

● Source of Sample: VC-A-01              Sample Number: WG939078-1

**Alpha Analytical**

**Mansfield, MA**

Remarks:

Figure

**LIQUID AND PLASTIC LIMIT TEST DATA**

10/13/2016

Location: VC-A-01

Sample Number: WG939078-1

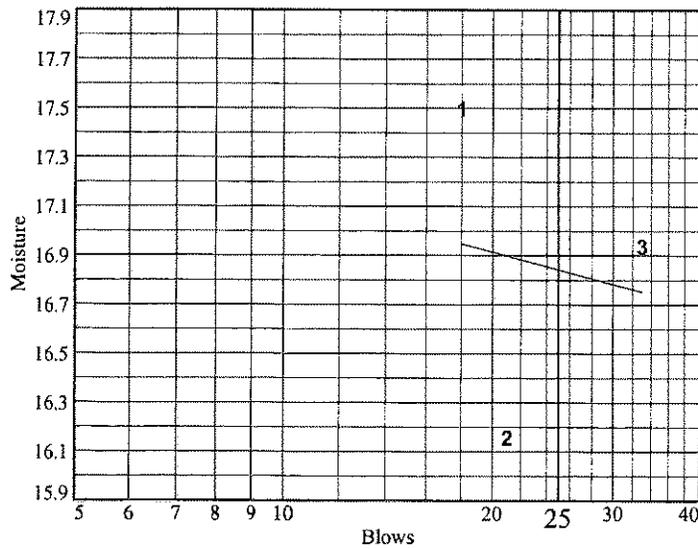
%<#40: 83.0

%<#200: 24.0

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.36	6.14	5.44			
Dry+Tare	5.59	5.45	4.82			
Tare	1.19	1.18	1.16			
# Blows	18	21	33			
Moisture	17.5	16.2	16.9			



Liquid Limit= 17  
 Plastic Limit= 22  
 Plasticity Index= NP  
 Natural Moisture= 20.1

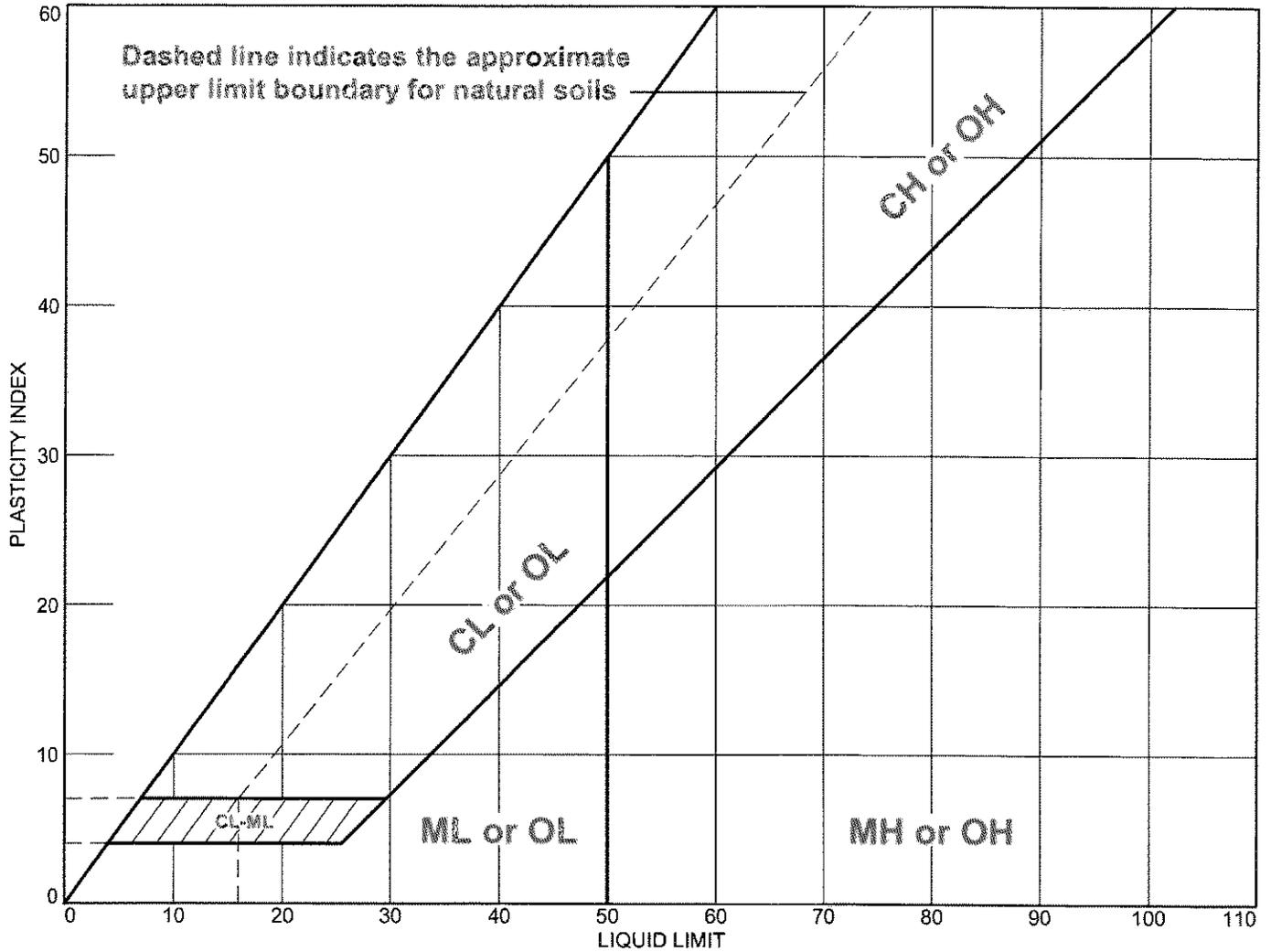
**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	5.20			
Dry+Tare	4.48			
Tare	1.2			
Moisture	22.0			

**Natural Moisture Data**

Wet+Tare	Dry+Tare	Tare	Moisture
12.67	10.75	1.18	20.1

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	18	19	NP	84.4	11.8	SP

Project No. \_\_\_\_\_ Client: \_\_\_\_\_

Project: \_\_\_\_\_

● Source of Sample: VC-A-02      Sample Number: L1629122-02

**Alpha Analytical**  
Mansfield, MA

Remarks:

Figure

**LIQUID AND PLASTIC LIMIT TEST DATA**

10/13/2016

Location: VC-A-02

Sample Number: L1629122-02

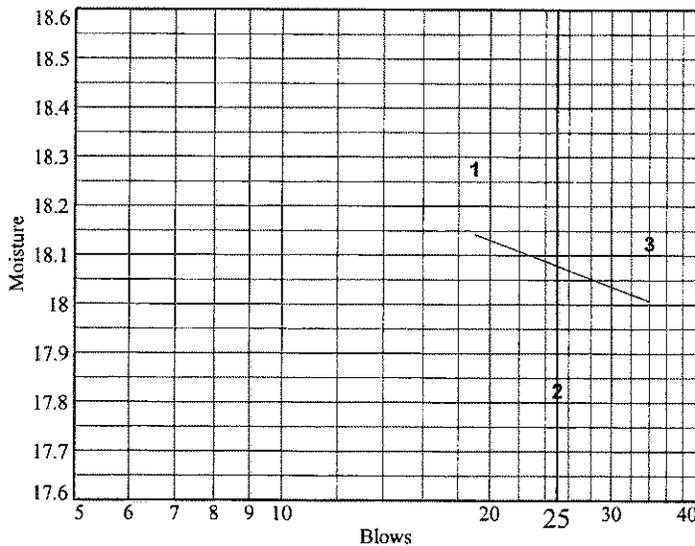
%<#40: 84.4

%<#200: 11.8

USCS: SP

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	5.71	7.81	6.97			
Dry+Tare	5.01	6.81	6.08			
Tare	1.18	1.20	1.17			
# Blows	19	25	34			
Moisture	18.3	17.8	18.1			



Liquid Limit= 18  
 Plastic Limit= 19  
 Plasticity Index= NP  
 Natural Moisture= 19.2

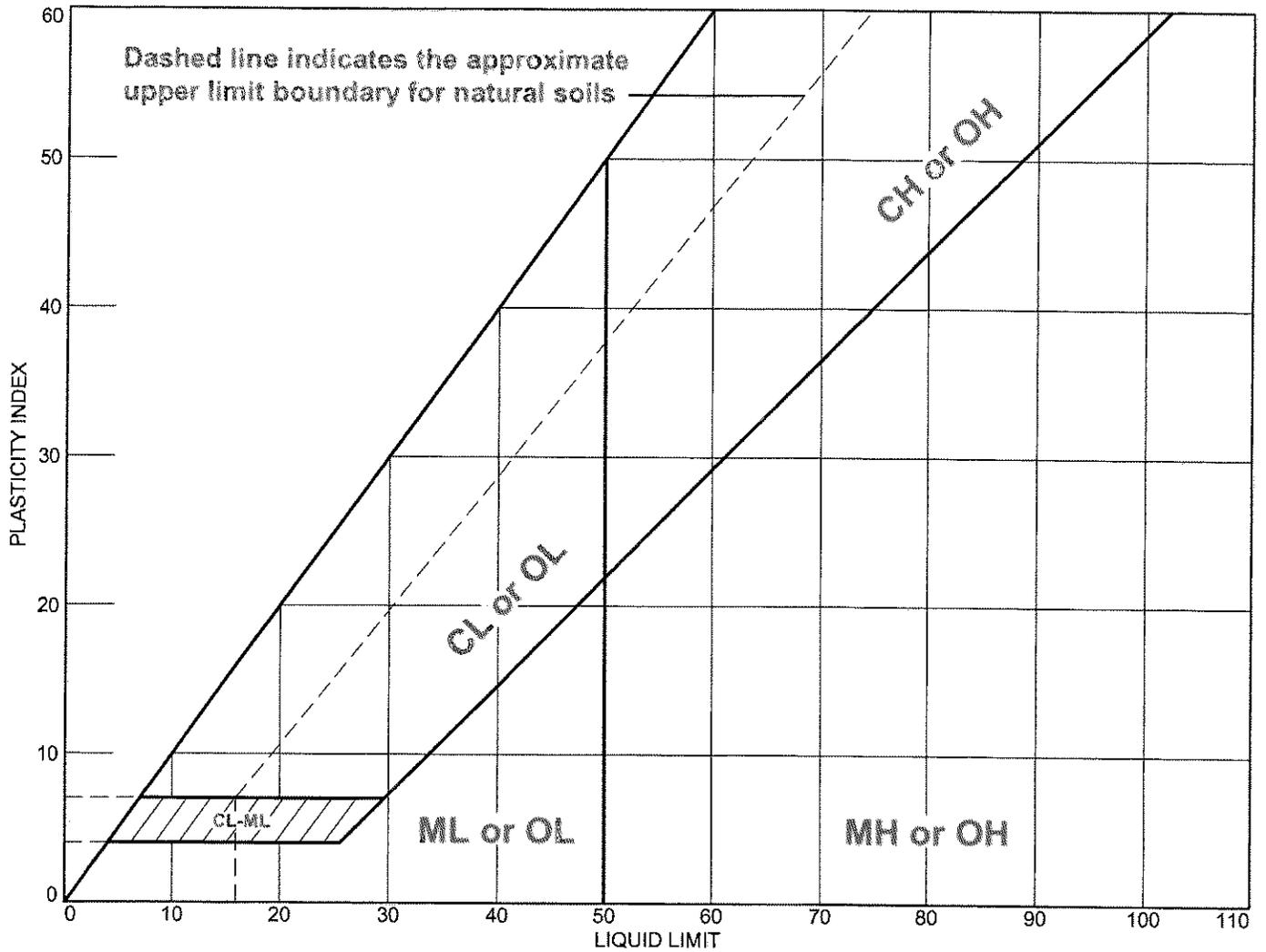
**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	4.92			
Dry+Tare	4.33			
Tare	1.18			
Moisture	18.7			

**Natural Moisture Data**

Wet+Tare	Dry+Tare	Tare	Moisture
15.6	13.28	1.18	19.2

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	21	22	NP	70.2	5.7	SP

<b>Project No.</b>	<b>Client:</b>
<b>Project:</b>	
● <b>Source of Sample:</b> VC-A-03	<b>Sample Number:</b> L1629122-03
<b>Alpha Analytical</b>	
<b>Mansfield, MA</b>	

**Remarks:**

**Figure**

**LIQUID AND PLASTIC LIMIT TEST DATA**

10/13/2016

Location: VC-A-03

Sample Number: L1629122-03

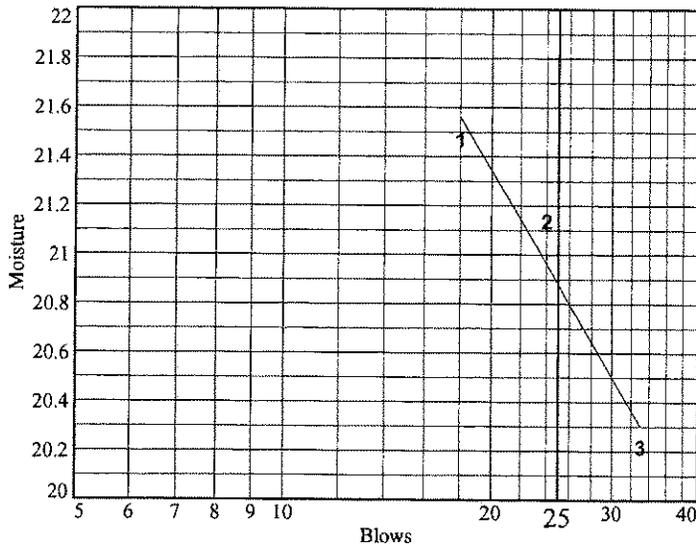
%<#40: 70.2

%<#200: 5.7

USCS: SP

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	7.29	7.15	8.85			
Dry+Tare	6.21	6.11	7.56			
Tare	1.18	1.19	1.18			
# Blows	18	24	33			
Moisture	21.5	21.1	20.2			



Liquid Limit= 21  
 Plastic Limit= 22  
 Plasticity Index= NP  
 Natural Moisture= 16.0

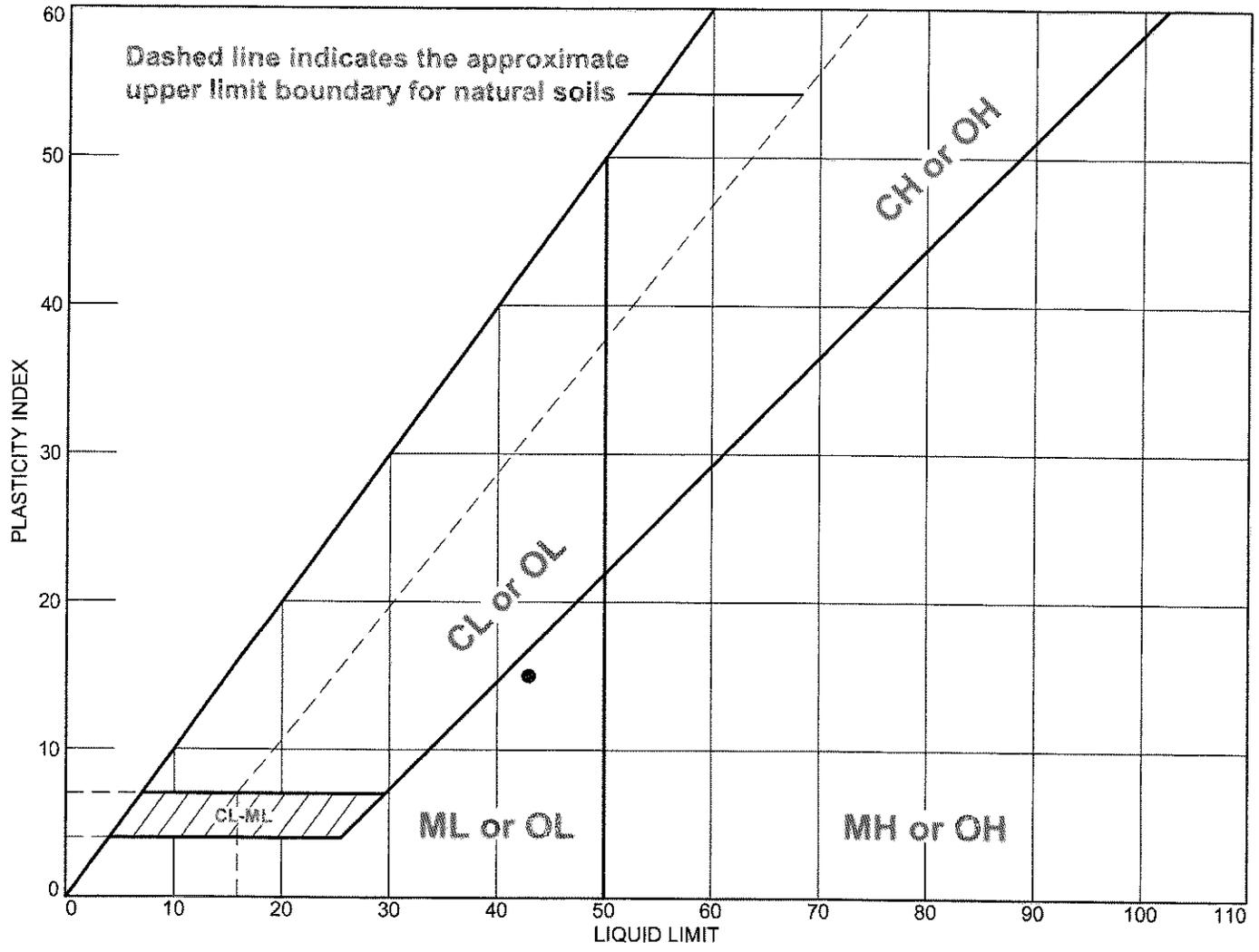
**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	4.89			
Dry+Tare	4.23			
Tare	1.18			
Moisture	21.6			

**Natural Moisture Data**

Wet+Tare	Dry+Tare	Tare	Moisture
15.81	13.8	1.2	16.0

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	43	28	15	69.3	45.0	SM

**Project No.** \_\_\_\_\_ **Client:** \_\_\_\_\_  
**Project:** \_\_\_\_\_  
**● Source of Sample:** VC-A-04-S1      **Sample Number:** L1629122-05

**Remarks:**

**Alpha Analytical**  
**Mansfield, MA**

**Figure**

**LIQUID AND PLASTIC LIMIT TEST DATA**

10/13/2016

Location: VC-A-04-S1

Sample Number: L1629122-05

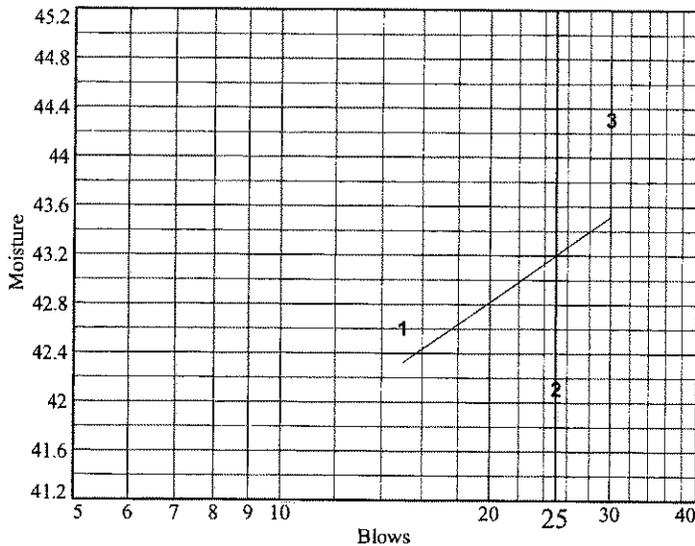
%<#40: 69.3

%<#200: 45.0

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	8.53	7.23	6.13			
Dry+Tare	6.34	5.44	4.61			
Tare	1.2	1.19	1.18			
# Blows	15	25	30			
Moisture	42.6	42.1	44.3			



Liquid Limit= 43  
 Plastic Limit= 28  
 Plasticity Index= 15  
 Natural Moisture= 50.1  
 Liquidity Index= 1.5

**Plastic Limit Data**

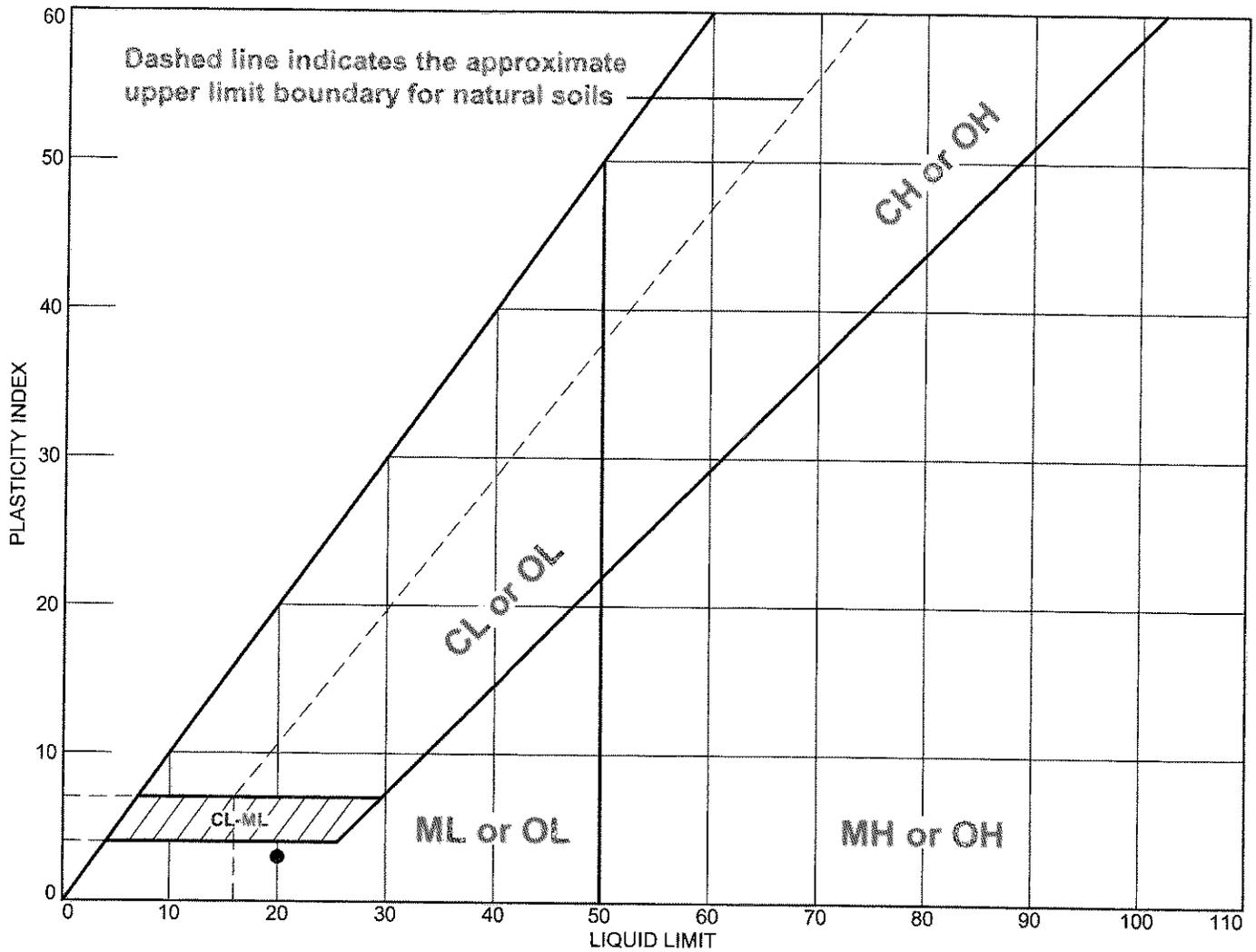
Run No.	1	2	3	4
Wet+Tare	3.18			
Dry+Tare	2.75			
Tare	1.2			
Moisture	27.7			

**Natural Moisture Data**

Wet+Tare	Dry+Tare	Tare	Moisture
14.42	10	1.18	50.1



# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	20	17	3	77.1	12.3	SM

Project No.                      Client:

Project:

● Source of Sample: VC-A-04-S2                      Sample Number: L1629122-06

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Alpha Analytical  
Mansfield, MA

Remarks:

Figure

**LIQUID AND PLASTIC LIMIT TEST DATA**

10/13/2016

Location: VC-A-04-S2

Sample Number: L1629122-06

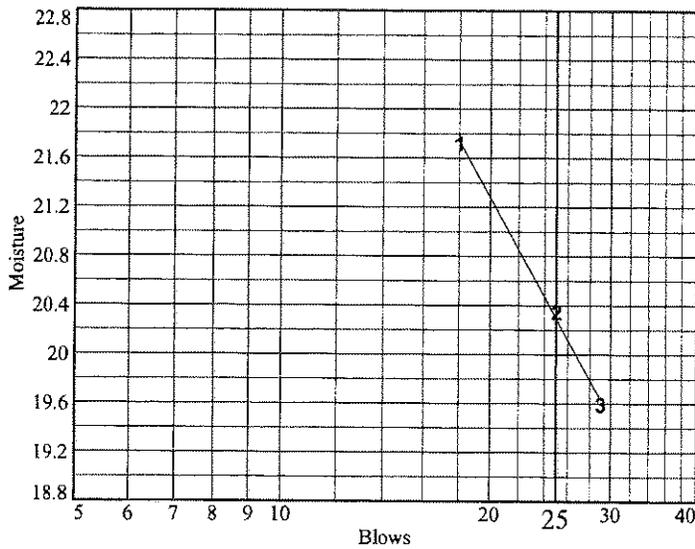
%<#40: 77.1

%<#200: 12.3

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	8.8	7.39	7.72			
Dry+Tare	7.44	6.34	6.65			
Tare	1.18	1.18	1.19			
# Blows	18	25	29			
Moisture	21.7	20.3	19.6			



Liquid Limit= 20  
 Plastic Limit= 17  
 Plasticity Index= 3  
 Natural Moisture= 26.8  
 Liquidity Index= 3.3

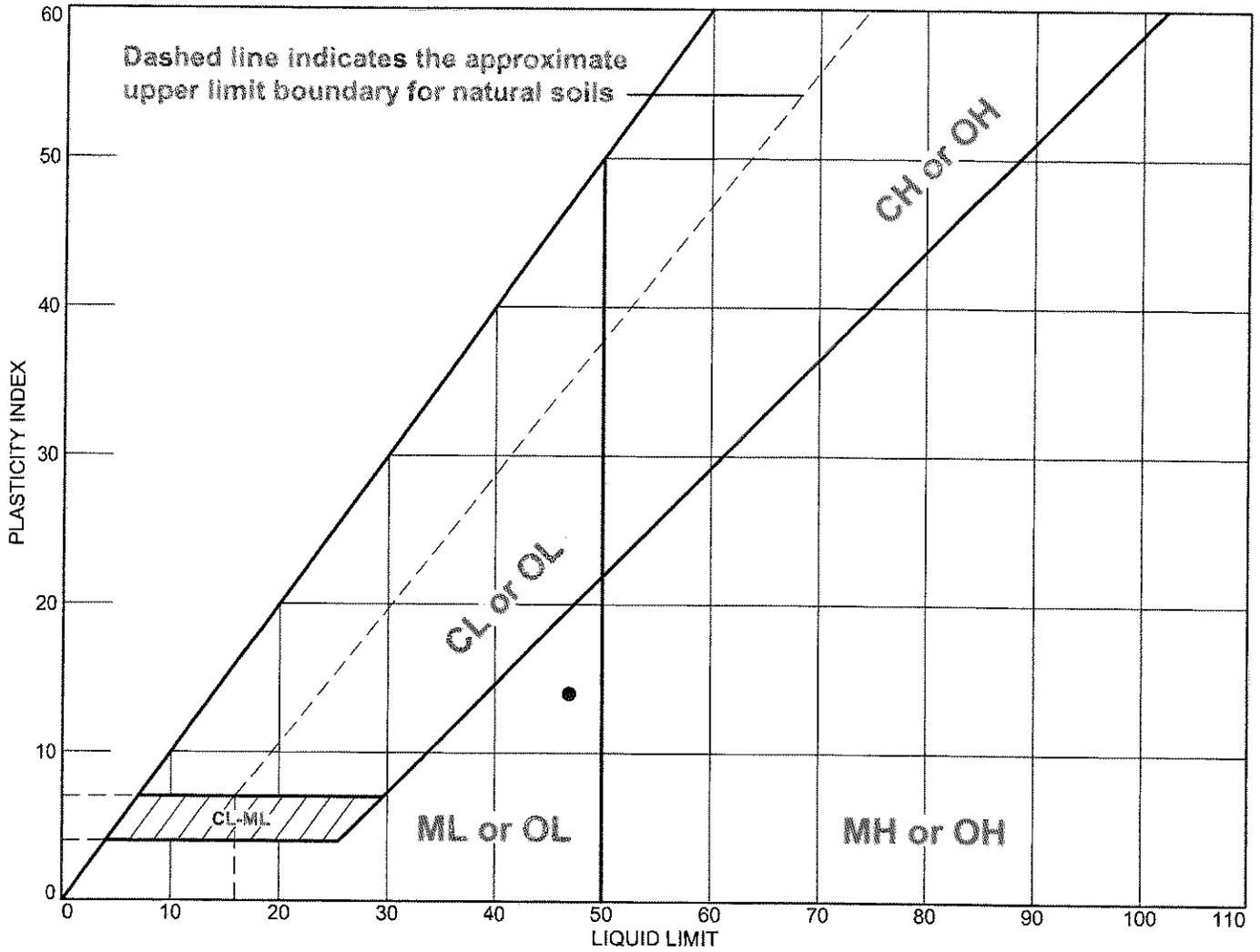
**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	5.62			
Dry+Tare	4.97			
Tare	1.19			
Moisture	17.2			

**Natural Moisture Data**

Wet+Tare	Dry+Tare	Tare	Moisture
18.87	15.13	1.2	26.8

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	47	33	14	88.0	71.9	ML

Project No.                      Client:

Project:

● Source of Sample: VC-A-04-S3                      Sample Number: L1629122-07

**Alpha Analytical**

**Mansfield, MA**

Remarks:

Figure

**LIQUID AND PLASTIC LIMIT TEST DATA**

10/13/2016

Location: VC-A-04-S3

Sample Number: L1629122-07

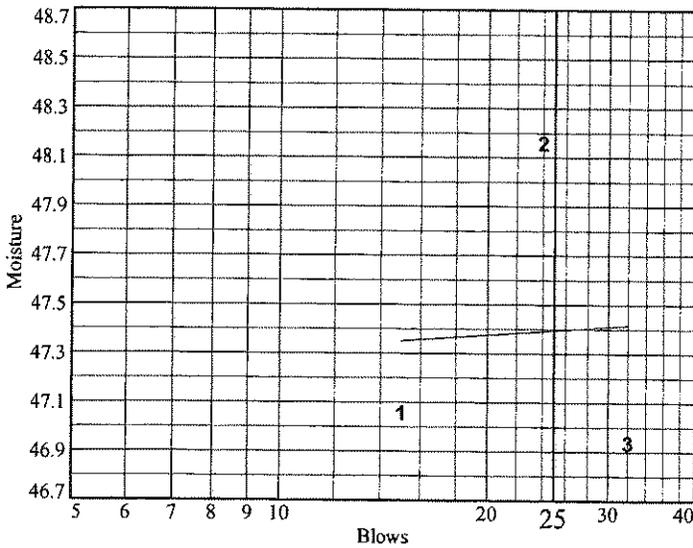
%<#40: 88.0

%<#200: 71.9

USCS: ML

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	5.95	5.61	6.96			
Dry+Tare	4.43	4.17	5.12			
Tare	1.2	1.18	1.2			
# Blows	15	24	32			
Moisture	47.1	48.2	46.9			



Liquid Limit= 47  
 Plastic Limit= 33  
 Plasticity Index= 14  
 Natural Moisture= 37.2  
 Liquidity Index= 0.3

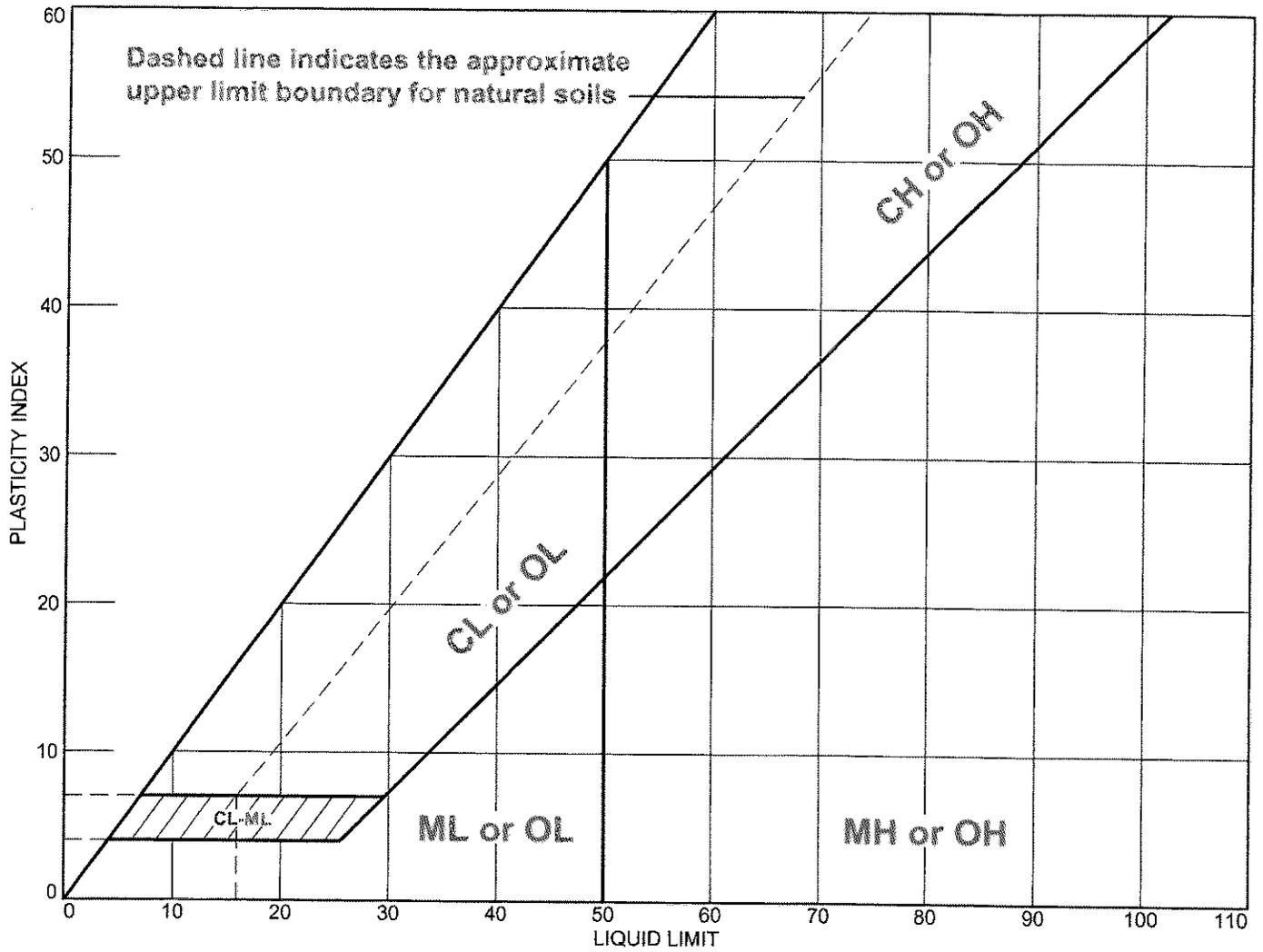
**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.19			
Dry+Tare	2.69			
Tare	1.18			
Moisture	33.1			

**Natural Moisture Data**

Wet+Tare	Dry+Tare	Tare	Moisture
12.53	9.46	1.2	37.2

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	18	19	NP	65.9	9.4	SP

Project No.                      Client:

Project:

● Source of Sample: VC-A-05              Sample Number: L1629122-08

**Alpha Analytical**

**Mansfield, MA**

Remarks:

**Figure**

LIQUID AND PLASTIC LIMIT TEST DATA

10/13/2016

Location: VC-A-05

Sample Number: L1629122-08

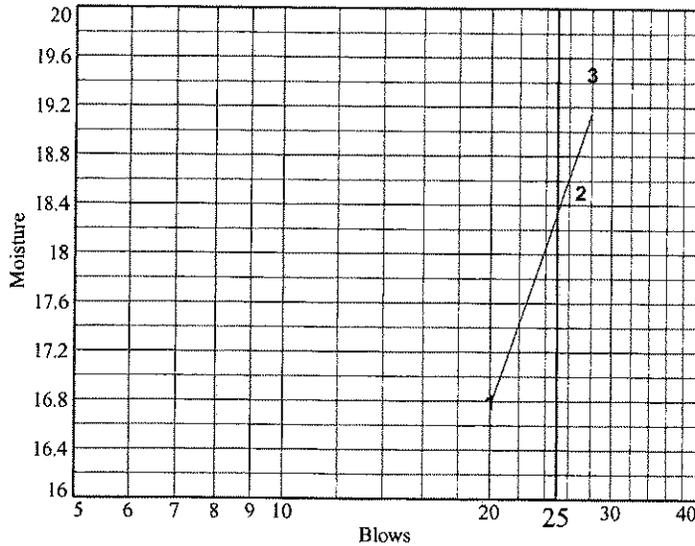
%<#40: 65.9

%<#200: 9.4

USCS: SP

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	10.15	9.76	7.5			
Dry+Tare	8.86	8.42	6.47			
Tare	1.18	1.18	1.18			
# Blows	20	27	28			
Moisture	16.8	18.5	19.5			



Liquid Limit= 18  
 Plastic Limit= 19  
 Plasticity Index= NP  
 Natural Moisture= 16.5

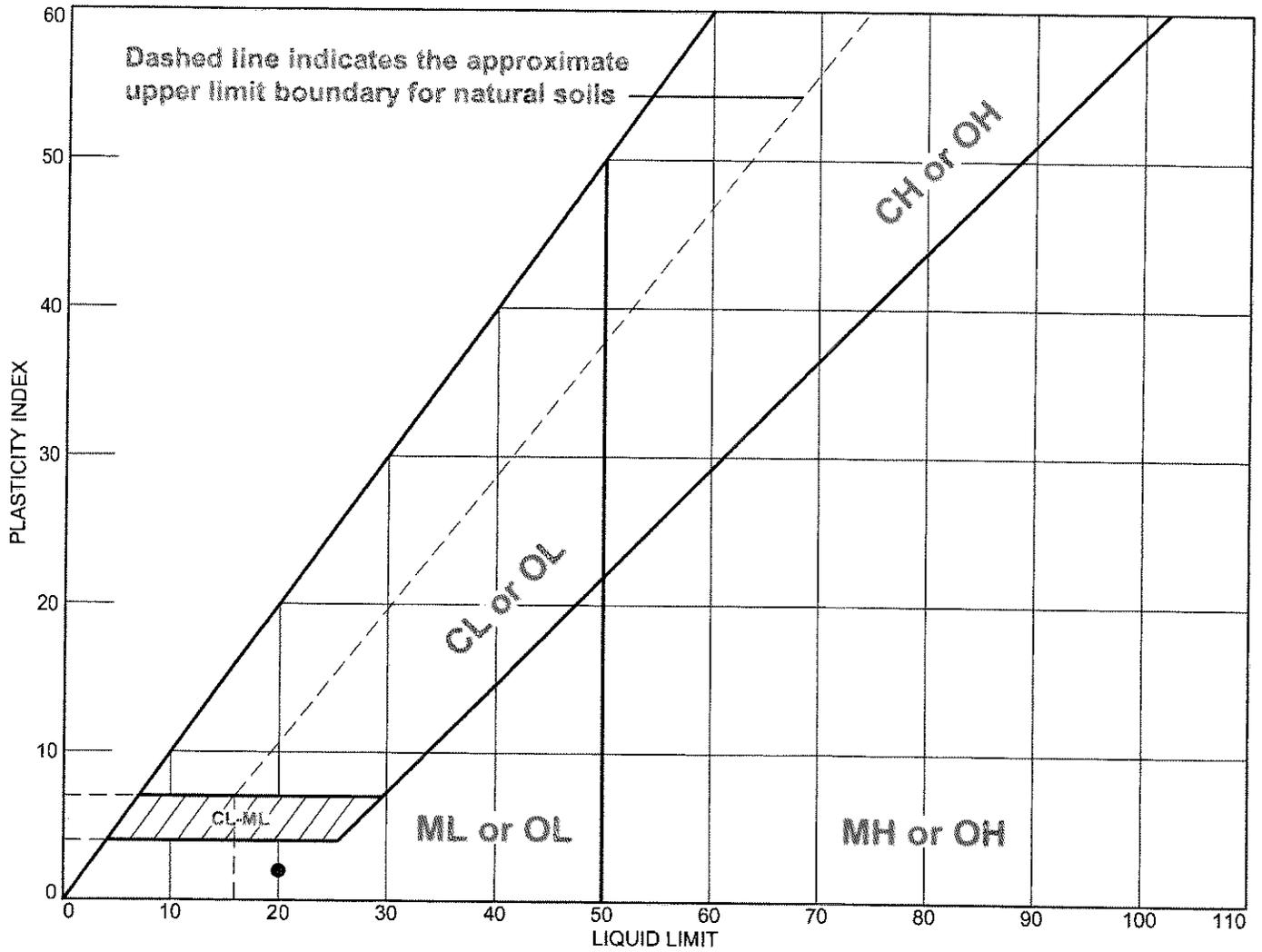
Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	4.65			
Dry+Tare	4.1			
Tare	1.18			
Moisture	18.8			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
14.48	12.60	1.21	16.5

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	20	18	2	17.6	5.8	SW

Project No.                      Client:

Project:

● Source of Sample: VC-A-06-S1                      Sample Number: L1629122-09

---

Alpha Analytical  
Mansfield, MA

Remarks:

Figure

LIQUID AND PLASTIC LIMIT TEST DATA

10/13/2016

Location: VC-A-06-S1

Sample Number: L1629122-09

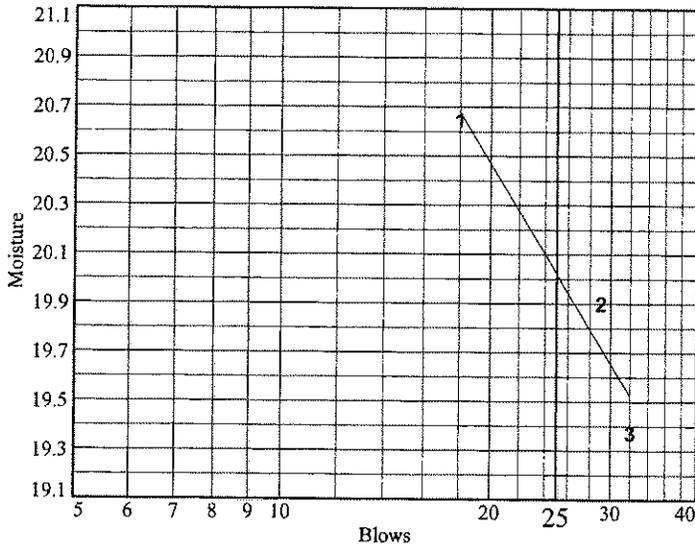
%<#40: 17.6

%<#200: 5.8

USCS: SW

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	6.39	6.06	6.92			
Dry+Tare	5.5	5.25	5.99			
Tare	1.19	1.18	1.19			
# Blows	18	29	32			
Moisture	20.6	19.9	19.4			



Liquid Limit= 20  
 Plastic Limit= 18  
 Plasticity Index= 2  
 Natural Moisture= 16.9  
 Liquidity Index= -0.6

Plastic Limit Data

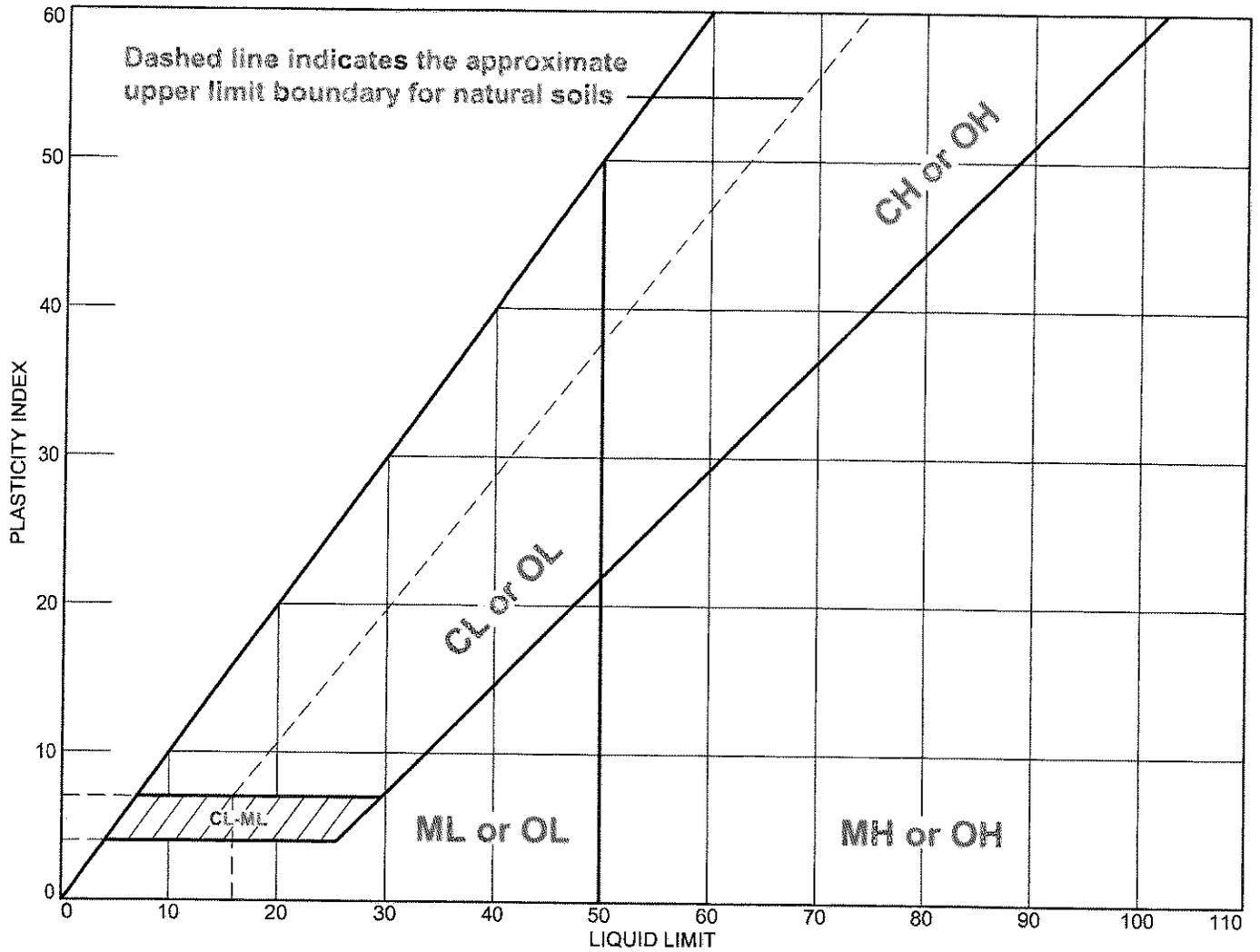
Run No.	1	2	3	4
Wet+Tare	4.03			
Dry+Tare	3.59			
Tare	1.2			
Moisture	18.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
18.77	16.23	1.19	16.9



# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	18	18	NP	43.0	9.3	SP

**Project No.** \_\_\_\_\_ **Client:** \_\_\_\_\_

**Project:** \_\_\_\_\_

● **Source of Sample:** VC-A-06-S2      **Sample Number:** L1629122-10

---

**Alpha Analytical**  
**Mansfield, MA**

**Remarks:**

**Figure**

LIQUID AND PLASTIC LIMIT TEST DATA

10/13/2016

Location: VC-A-06-S2

Sample Number: L1629122-10

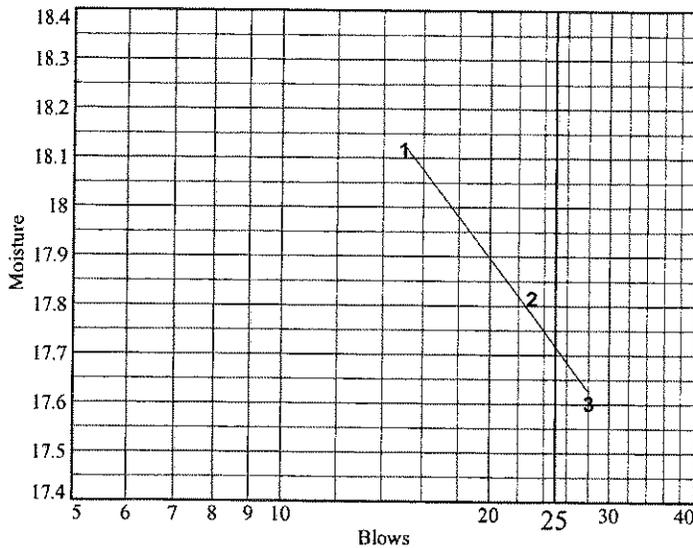
%<#40: 43.0

%<#200: 9.3

USCS: SP

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	7.96	7.33	7.47			
Dry+Tare	6.92	6.4	6.53			
Tare	1.18	1.18	1.19			
# Blows	15	23	28			
Moisture	18.1	17.8	17.6			



Liquid Limit= 18  
 Plastic Limit= 18  
 Plasticity Index= NP  
 Natural Moisture= 16.9

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	6.22			
Dry+Tare	5.44			
Tare	1.19			
Moisture	18.4			

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
16.67	14.43	1.17	16.9

## Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624:** m/p-xylene, o-xylene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

**EPA 300:** DW: Bromide

**EPA 6860:** NPW and SCM: Perchlorate

**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation

**EPA 9012B:** NPW: Total Cyanide

**EPA 9050A:** NPW: Specific Conductance

**SM3500:** NPW: Ferrous Iron

**SM4500:** NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**SM5310C:** DW: Dissolved Organic Carbon

### Mansfield Facility

**SM 2540D:** TSS

**EPA 3005A** NPW

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix:** **EPA 3050B**

The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

**EPA 245.1 Hg.**

**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



# CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 9/16/16

ALPHA Job #: U602 9/22

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

### Project Information

Project Name: US Wind  
Project Location: DE  
Project #: 4167-022  
Project Manager: S. Wilson  
ALPHA Quote #:

### Report Information - Data Deliverables

ADEX  EMAIL

### Billing Information

Same as Client info PO #:

### Client Information

Client: ESS Group, Inc  
Address: 100 5th Ave  
Waltham, MA 02451  
Phone: 781-419-7718  
Email: M.phillips@essgroup.com

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)  
Date Due:

### Regulatory Requirements & Project Information Requirements

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State / Fed Program DE Sediment Criteria

Additional Project Information:  
**\* See Liz Porta for Delaware Physical and Chemical Analysis List.**

ANALYSIS		SAMPLE INFO	
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH	Filtration	<input type="checkbox"/> Field <input type="checkbox"/> Lab to do
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	METALS: <input type="checkbox"/> RCRAS <input type="checkbox"/> RCRAS 8 <input type="checkbox"/> PP13	Preservation	<input type="checkbox"/> Lab to do
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only		
PCB <input type="checkbox"/> PEST	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint		

*Delaware Chemical Analysis*  
*Delaware Physical Analysis*

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	ANALYSIS		SAMPLE INFO		Sample Comments
		Date	Time			VOC	SVOC	Filtration	Preservation	
29122.01	VC-A-01	9/10/16	0800	SE	MMJM			X	X	Frozen on 9/10/16 @ 1500.
.02	VC-A-02	9/10/16	0830					X	X	↓ ↓
.03	A-03	9/7/16	1930					X	X	
.04	A-03-DUP	9/7/16	1930					X	X	
.04	A-03-MS	9/7/16	1930					X	X	
.04	A-03-MSD	9/7/16	1930					X	X	
.05	VC-A-04-S1	9/10/16	1200					X	X	Frozen on 9/10/16 @ 1500.
.06	VC-A-04-S2	9/10/16	1215					X	X	↓ ↓
.07	VC-A-04-S3	9/10/16	1230					X	X	
.08	VC-A-05	9/10/16	1330					X	X	↓ ↓

- |                       |  |
|-----------------------|--|
| <b>Container Type</b> | <b>Preservative</b>                              |
| P= Plastic            | A= None  |
| A= Amber glass        | B= HCl   |
| V= Vial               | C= HNO <sub>3</sub>                              |
| G= Glass              | D= H <sub>2</sub> SO <sub>4</sub>                |
| B= Bacteria cup       | E= NaOH  |
| C= Cube               | F= MeOH  |
| O= Other              | G= NaHSO <sub>4</sub>                            |
| E= Encore             | H= Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub> |
| D= BOD Bottle         | I= Ascorbic Acid                                 |
|                       | J= NH <sub>4</sub> Cl                            |
|                       | K= Zn Acetate                                    |
|                       | O= Other   |

Relinquished By: <u>M. Phillips</u>	Date/Time: <u>9/15/16 1352</u>	Received By: <u>Tom [Signature]</u>	Date/Time: <u>9/15/16 1352</u>	All samples submitted are subject to Alpha's Terms and Conditions. See reverse side. FORM NO: 01-01 (rev. 12-Mar-2012)
<u>[Signature]</u>	<u>9-15-16 1800</u>	<u>[Signature]</u>	<u>9-15-16 1800</u>	
<u>[Signature]</u>	<u>9/16/16 0510</u>	<u>[Signature]</u>	<u>9/16/16 0510</u>	

TOTAL # BOTTLES



October 18, 2016

Ms. Elizabeth Porta  
Alpha Analytical Laboratory  
8 Walkup Drive  
Westborough, Massachusetts 01581

Re: Dioxin and PCB Subcontract, Liz Porta PM  
Work Order: 9796  
SDG: L1629122

Dear Ms. Porta:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on September 21, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins  
Project Manager

Enclosures

# CHAIN OF CUSTODY

PAGE OF

ALPHA Job #: L1629122

Date Rec'd in Lab:



Westborough, MA  
TEL: 508-898-9220  
FAX: 508-898-9133

Project Name:

Project Location: DE

### Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:  Standard  Rush (ONLY IF PRE-APPROVED)

Email: [subreports@alphalab.com](mailto:subreports@alphalab.com) Due Date: Time:

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job #L1629122 on this report.

### Project Information

Project #:

Project Manager: Liz Porta

ALPHA Quote #:

### Turn-Around Time

### Report Information

FAX  EMAIL  Same as Client info

ADEX  Add'l Deliverables

### Regulatory Requirements/Report Limits

State/Fed Program Criteria

### MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?

Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

### ANALYSIS

ANALYSIS	PCB Congeners 168A	Dioxin /Furan 1631B	Sample Handling	TOTAL # BOTTLES
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Filtration <input type="checkbox"/> Done <input type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do <input type="checkbox"/> Preservation <input type="checkbox"/> Lab to do (Please specify below)	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Sample Specific Comments	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-01	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-02	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-03	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-04	6
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-05	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-06	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-07	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-08	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-09	2
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L1629122-10	2

Serial No: 1018161532

PLEASE ANSWER QUESTIONS ABOVE!

## IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By: *[Signature]*

Date/Time: 9/10/16 17:00  
Received By: *[Signature]*

Date/Time: 21 Sep 16 9:50

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

**SAMPLE RECEIPT CHECKLIST**  
Cape Fear Analytical

Client: ALPH Work Order: 9796

Shipping Company: UPS Date/Time Received: 21 Sep 2016 9:50

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?			<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		<input checked="" type="checkbox"/>	
Samples < 2x background?		<input checked="" type="checkbox"/>	

\* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			<input checked="" type="checkbox"/>

Air Witness: \_\_\_\_\_ Serial No: 10181615-32

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other(describe)
2 Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>			
3 Samples requiring cold preservation within 0-6°C?	<input checked="" type="checkbox"/>			Preservation Method: ice bags blue ice dry ice none other (describe) <u>3.3°C</u>
4 Aqueous samples found to have visible solids?		<input checked="" type="checkbox"/>		Sample IDs, containers affected:
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
6 Samples requiring preservation have no residual chlorine?		<input checked="" type="checkbox"/>		Sample IDs, containers affected: If preservative added, Lot#:
7 Samples received within holding time?	<input checked="" type="checkbox"/>			Sample IDs, tests affected:
8 Sample IDs on COC match IDs on containers?			<input checked="" type="checkbox"/>	Sample IDs, containers affected: <u>MJD 21 Sep 16</u> <u>1 container of VA VC-A-03 labelled on lid only</u>
9 Date & time of COC match date & time on containers?			<input checked="" type="checkbox"/>	Sample IDs, containers affected: <u>1 of 2 containers of VC-06-S2 has 9/13/16 as collection date</u>
10 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			List type and number of containers / Sample IDs, containers affected: <u>2-40cc ampers each except for VC-A-03-DUP w/ 6</u>
11 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments:

Checklist performed by: Initials: MJD Date: 21 Sep 2016



**Subject:** Re: L1629122  
**From:** Liz Porta <eport@alphalab.com>  
**Date:** 9/21/2016 5:32 PM  
**To:** Cynde Larkins <cynde.larkins@cfanalytical.com>  
**CC:** "Melissa O'Dorisio" <mel00770@cfanalytical.com>

Hi Cynde,

The Alpha COC is wrong, the correct collection date is 9/13 for both jars for sample VC-A-06-S2.

Thank you for checking!  
Liz

On Wed, Sep 21, 2016 at 4:46 PM, Cynde Larkins <[cynde.larkins@cfanalytical.com](mailto:cynde.larkins@cfanalytical.com)> wrote:

Liz,

Please let us know your resolution for the following issue:

***Sample VC-A-06-S2, container 2 of 2 has a collection date of 9/13/16 on the label, COC has 9/10/16.***

Thank you,

--

Cynde Larkins  
Project Manager  
Cape Fear Analytical, LLC  
3306 Kitty Hawk Road Suite 120  
Wilmington, NC 28405  
[\(910\) 795-0421](tel:(910)795-0421)

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**Liz Porta**  
Project Manager

Email: [eporta@alphalab.com](mailto:eporta@alphalab.com)

Direct: 508-844-4124

Main: 508-844-4100

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# **High Resolution Dioxins and Furans Analysis**

# Case Narrative

**HDOX Case Narrative**  
**Alpha Analytical Laboratory (ALPH)**  
**SDG L1629122**  
**Work Order 9796**

**Method/Analysis Information**

**Product:** Dioxins/Furans by EPA Method 1613B in Solids  
**Analytical Method:** EPA Method 1613B  
**Extraction Method:** SW846 3540C  
**Analytical Batch Number:** 32939  
**Clean Up Batch Number:** 32938  
**Extraction Batch Number:** 32937

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in Method 1613B:

<b>Sample ID</b>	<b>Client ID</b>
9796001	VC-A-01
9796002	VC-A-02
9796003	VC-A-03
9796004	VC-A-03 DUP
9796005	9796004(VC-A-03 DUP) Matrix Spike (MS)
9796006	9796004(VC-A-03 DUP) Matrix Spike Duplicate (MSD)
9796007	VC-A-04-S1
9796008	VC-A-04-S2
9796009	VC-A-04-S3
9796010	VC-A-05
9796011	VC-A-06-S1
9796012	VC-A-06-S2
12017014	Method Blank (MB)
12017015	Laboratory Control Sample (LCS)
12017016	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

### **Calibration Information**

#### **Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

#### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

### **Quality Control (QC) Information**

#### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Surrogate Recoveries**

All surrogate recoveries were within the established acceptance criteria for this SDG.

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

#### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

#### **QC Sample Designation**

Sample 9796004 (VC-A-03 DUP)- Batch 32939 was selected for analysis as the matrix spike and matrix spike duplicate.

#### **Matrix Spike (MS) Recovery Statement**

The MS recoveries were within the established acceptance limits.

#### **Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD recoveries were within the established acceptance limits.

#### **MS/MSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the MS and MSD met the acceptance limits.

### **Technical Information**

**Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

**Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

**Sample Dilutions**

The samples in this SDG did not require dilutions.

**Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

**Miscellaneous Information****Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

**Manual Integrations**

Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

**Sample preparation**

No difficulties were encountered during sample preparation.

**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary



## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Certificate of Analysis Report for

ALPH001 Alpha Analytical Laboratory

Client SDG: L1629122 CFA Work Order: 9796

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

**Signature:** 

**Name:** Heather Patterson

**Date:** 17 OCT 2016

**Title:** Group Leader

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796001	<b>Date Collected:</b> 09/10/2016 09:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.1
<b>Client ID:</b> VC-A-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 18:40	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 13.48 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.906	pg/g	0.906
40321-76-4	1,2,3,7,8-PeCDD	U	4.53	pg/g	4.53
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.53	pg/g	4.53
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.53	pg/g	4.53
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.53	pg/g	4.53
35822-46-9	1,2,3,4,6,7,8-HpCDD		37.3	pg/g	4.53
3268-87-9	1,2,3,4,6,7,8,9-OCDD		548	pg/g	9.06
51207-31-9	2,3,7,8-TCDF	U	.906	pg/g	0.906
57117-41-6	1,2,3,7,8-PeCDF	U	4.53	pg/g	4.53
57117-31-4	2,3,4,7,8-PeCDF	U	4.53	pg/g	4.53
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.53	pg/g	4.53
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.53	pg/g	4.53
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.53	pg/g	4.53
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.53	pg/g	4.53
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.53	pg/g	4.53
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.53	pg/g	4.53
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.06	pg/g	9.06
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		42.0	pg/g	0.906
36088-22-9	Total Pentachlorodibenzo-p-dioxin		8.55	pg/g	4.53
34465-46-8	Total Hexachlorodibenzo-p-dioxin		53.6	pg/g	4.53
37871-00-4	Total Heptachlorodibenzo-p-dioxin		119	pg/g	4.53
30402-14-3	Total Tetrachlorodibenzofuran	U	.906	pg/g	0.906
30402-15-4	Total Pentachlorodibenzofuran	U	4.53	pg/g	4.53
55684-94-1	Total Hexachlorodibenzofuran	U	4.53	pg/g	4.53
38998-75-3	Total Heptachlorodibenzofuran	U	4.53	pg/g	4.53
3333-30-0	TEQ WHO2005 ND=0		0.537	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.68	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	181	pg/g	82.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		156	181	pg/g	86.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		146	181	pg/g	80.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		140	181	pg/g	77.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		144	181	pg/g	79.6	(23%-140%)
13C-OCDD		192	362	pg/g	53.0	(17%-157%)
13C-2,3,7,8-TCDF		135	181	pg/g	74.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		145	181	pg/g	79.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		143	181	pg/g	79.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		125	181	pg/g	68.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		125	181	pg/g	69.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		125	181	pg/g	68.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		127	181	pg/g	70.4	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796001	<b>Date Collected:</b> 09/10/2016 09:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.1
<b>Client ID:</b> VC-A-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 18:40	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 13.48 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			105	181	pg/g	58.1 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			133	181	pg/g	73.3 (26%-138%)
37Cl-2,3,7,8-TCDD			16.3	18.1	pg/g	90.2 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796002	<b>Date Collected:</b> 09/10/2016 08:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.3
<b>Client ID:</b> VC-A-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 19:27	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 13.15 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.931	pg/g	0.931
40321-76-4	1,2,3,7,8-PeCDD	U	4.65	pg/g	4.65
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.65	pg/g	4.65
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.65	pg/g	4.65
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.65	pg/g	4.65
35822-46-9	1,2,3,4,6,7,8-HpCDD		32.9	pg/g	4.65
3268-87-9	1,2,3,4,6,7,8,9-OCDD		348	pg/g	9.31
51207-31-9	2,3,7,8-TCDF	U	.931	pg/g	0.931
57117-41-6	1,2,3,7,8-PeCDF	U	4.65	pg/g	4.65
57117-31-4	2,3,4,7,8-PeCDF	U	4.65	pg/g	4.65
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.65	pg/g	4.65
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.65	pg/g	4.65
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.65	pg/g	4.65
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.65	pg/g	4.65
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.65	pg/g	4.65
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.65	pg/g	4.65
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.31	pg/g	9.31
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		23.4	pg/g	0.931
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.65	pg/g	4.65
34465-46-8	Total Hexachlorodibenzo-p-dioxin		32.1	pg/g	4.65
37871-00-4	Total Heptachlorodibenzo-p-dioxin		81.6	pg/g	4.65
30402-14-3	Total Tetrachlorodibenzofuran	U	.931	pg/g	0.931
30402-15-4	Total Pentachlorodibenzofuran	U	4.65	pg/g	4.65
55684-94-1	Total Hexachlorodibenzofuran	U	4.65	pg/g	4.65
38998-75-3	Total Heptachlorodibenzofuran	U	4.65	pg/g	4.65
3333-30-0	TEQ WHO2005 ND=0		0.434	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.72	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	186	pg/g	79.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		155	186	pg/g	83.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		138	186	pg/g	74.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		137	186	pg/g	73.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		133	186	pg/g	71.3	(23%-140%)
13C-OCDD		189	372	pg/g	50.8	(17%-157%)
13C-2,3,7,8-TCDF		133	186	pg/g	71.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		140	186	pg/g	75.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		142	186	pg/g	76.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		113	186	pg/g	60.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		112	186	pg/g	60.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		116	186	pg/g	62.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		117	186	pg/g	63.1	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796002	<b>Date Collected:</b> 09/10/2016 08:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.3
<b>Client ID:</b> VC-A-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 19:27	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 13.15 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			100	186	pg/g	53.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			123	186	pg/g	66.0 (26%-138%)
37Cl-2,3,7,8-TCDD			16.3	18.6	pg/g	87.6 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796003	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-03		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 20:14	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.3 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.933	pg/g	0.933
40321-76-4	1,2,3,7,8-PeCDD	U	4.66	pg/g	4.66
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.66	pg/g	4.66
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.66	pg/g	4.66
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.66	pg/g	4.66
35822-46-9	1,2,3,4,6,7,8-HpCDD		61.1	pg/g	4.66
3268-87-9	1,2,3,4,6,7,8,9-OCDD		575	pg/g	9.33
51207-31-9	2,3,7,8-TCDF	U	.933	pg/g	0.933
57117-41-6	1,2,3,7,8-PeCDF	U	4.66	pg/g	4.66
57117-31-4	2,3,4,7,8-PeCDF	U	4.66	pg/g	4.66
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.66	pg/g	4.66
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.66	pg/g	4.66
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.66	pg/g	4.66
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.66	pg/g	4.66
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.66	pg/g	4.66
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.66	pg/g	4.66
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.33	pg/g	9.33
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		52.3	pg/g	0.933
36088-22-9	Total Pentachlorodibenzo-p-dioxin		6.83	pg/g	4.66
34465-46-8	Total Hexachlorodibenzo-p-dioxin		49.3	pg/g	4.66
37871-00-4	Total Heptachlorodibenzo-p-dioxin		127	pg/g	4.66
30402-14-3	Total Tetrachlorodibenzofuran	U	.933	pg/g	0.933
30402-15-4	Total Pentachlorodibenzofuran	U	4.66	pg/g	4.66
55684-94-1	Total Hexachlorodibenzofuran	U	4.66	pg/g	4.66
38998-75-3	Total Heptachlorodibenzofuran	U	4.66	pg/g	4.66
3333-30-0	TEQ WHO2005 ND=0		0.783	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.08	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		144	187	pg/g	77.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		154	187	pg/g	82.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		140	187	pg/g	75.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		142	187	pg/g	76.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		140	187	pg/g	74.8	(23%-140%)
13C-OCDD		212	373	pg/g	56.8	(17%-157%)
13C-2,3,7,8-TCDF		130	187	pg/g	69.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		143	187	pg/g	76.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		143	187	pg/g	76.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		122	187	pg/g	65.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		120	187	pg/g	64.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		126	187	pg/g	67.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		125	187	pg/g	67.0	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796003	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-03		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 20:14	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.3 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			108	187	pg/g	58.2 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			132	187	pg/g	70.5 (26%-138%)
37Cl-2,3,7,8-TCDD			14.8	18.7	pg/g	79.2 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796004	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 21:01	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.59 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.914	pg/g	0.914
40321-76-4	1,2,3,7,8-PeCDD	U	4.57	pg/g	4.57
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.57	pg/g	4.57
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.57	pg/g	4.57
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.57	pg/g	4.57
35822-46-9	1,2,3,4,6,7,8-HpCDD		14.3	pg/g	4.57
3268-87-9	1,2,3,4,6,7,8,9-OCDD		196	pg/g	9.14
51207-31-9	2,3,7,8-TCDF	U	.914	pg/g	0.914
57117-41-6	1,2,3,7,8-PeCDF	U	4.57	pg/g	4.57
57117-31-4	2,3,4,7,8-PeCDF	U	4.57	pg/g	4.57
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.57	pg/g	4.57
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.57	pg/g	4.57
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.57	pg/g	4.57
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.57	pg/g	4.57
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.57	pg/g	4.57
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.57	pg/g	4.57
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.14	pg/g	9.14
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		11.0	pg/g	0.914
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.57	pg/g	4.57
34465-46-8	Total Hexachlorodibenzo-p-dioxin		10.8	pg/g	4.57
37871-00-4	Total Heptachlorodibenzo-p-dioxin		37.4	pg/g	4.57
30402-14-3	Total Tetrachlorodibenzofuran	U	.914	pg/g	0.914
30402-15-4	Total Pentachlorodibenzofuran	U	4.57	pg/g	4.57
55684-94-1	Total Hexachlorodibenzofuran	U	4.57	pg/g	4.57
38998-75-3	Total Heptachlorodibenzofuran	U	4.57	pg/g	4.57
3333-30-0	TEQ WHO2005 ND=0		0.202	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.39	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		163	183	pg/g	89.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		170	183	pg/g	92.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		141	183	pg/g	76.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		146	183	pg/g	79.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		134	183	pg/g	73.5	(23%-140%)
13C-OCDD		192	366	pg/g	52.5	(17%-157%)
13C-2,3,7,8-TCDF		144	183	pg/g	78.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		156	183	pg/g	85.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		154	183	pg/g	84.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		122	183	pg/g	66.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		118	183	pg/g	64.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		123	183	pg/g	67.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		125	183	pg/g	68.3	(29%-147%)



**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796004	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 21:01	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.59 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			107	183	pg/g	58.3 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			126	183	pg/g	69.1 (26%-138%)
37Cl-2,3,7,8-TCDD			17.8	18.3	pg/g	97.4 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 23:23	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 15.89 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.947	pg/g	0.947
40321-76-4	1,2,3,7,8-PeCDD	U	4.73	pg/g	4.73
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.73	pg/g	4.73
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.73	pg/g	4.73
19408-74-3	1,2,3,7,8,9-HxCDD		5.80	pg/g	4.73
35822-46-9	1,2,3,4,6,7,8-HpCDD		94.8	pg/g	4.73
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1660	pg/g	9.47
51207-31-9	2,3,7,8-TCDF	U	.947	pg/g	0.947
57117-41-6	1,2,3,7,8-PeCDF	U	4.73	pg/g	4.73
57117-31-4	2,3,4,7,8-PeCDF	U	4.73	pg/g	4.73
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.73	pg/g	4.73
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.73	pg/g	4.73
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.73	pg/g	4.73
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.73	pg/g	4.73
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.73	pg/g	4.73
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.73	pg/g	4.73
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.47	pg/g	9.47
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		5.79	pg/g	0.947
36088-22-9	Total Pentachlorodibenzo-p-dioxin		20.0	pg/g	4.73
34465-46-8	Total Hexachlorodibenzo-p-dioxin		124	pg/g	4.73
37871-00-4	Total Heptachlorodibenzo-p-dioxin		326	pg/g	4.73
30402-14-3	Total Tetrachlorodibenzofuran		2.17	pg/g	0.947
30402-15-4	Total Pentachlorodibenzofuran	U	4.73	pg/g	4.73
55684-94-1	Total Hexachlorodibenzofuran	U	4.73	pg/g	4.73
38998-75-3	Total Heptachlorodibenzofuran	U	4.73	pg/g	4.73
3333-30-0	TEQ WHO2005 ND=0		2.03	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		7.16	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	189	pg/g	82.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		149	189	pg/g	78.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		146	189	pg/g	77.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		147	189	pg/g	77.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		144	189	pg/g	76.3	(23%-140%)
13C-OCDD		216	379	pg/g	57.0	(17%-157%)
13C-2,3,7,8-TCDF		141	189	pg/g	74.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		136	189	pg/g	71.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		137	189	pg/g	72.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		131	189	pg/g	69.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		123	189	pg/g	64.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		127	189	pg/g	67.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		128	189	pg/g	67.7	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 23:23	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 15.89 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			113	189	pg/g	59.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			136	189	pg/g	71.7 (26%-138%)
37Cl-2,3,7,8-TCDD			16.0	18.9	pg/g	84.4 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796008	<b>Date Collected:</b> 09/10/2016 12:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 19.3
<b>Client ID:</b> VC-A-04-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 00:10	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-12		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 13.13 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.944	pg/g	0.944
40321-76-4	1,2,3,7,8-PeCDD	U	4.72	pg/g	4.72
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.72	pg/g	4.72
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.72	pg/g	4.72
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.72	pg/g	4.72
35822-46-9	1,2,3,4,6,7,8-HpCDD		37.0	pg/g	4.72
3268-87-9	1,2,3,4,6,7,8,9-OCDD		911	pg/g	9.44
51207-31-9	2,3,7,8-TCDF	U	.944	pg/g	0.944
57117-41-6	1,2,3,7,8-PeCDF	U	4.72	pg/g	4.72
57117-31-4	2,3,4,7,8-PeCDF	U	4.72	pg/g	4.72
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.72	pg/g	4.72
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.72	pg/g	4.72
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.72	pg/g	4.72
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.72	pg/g	4.72
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.72	pg/g	4.72
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.72	pg/g	4.72
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.44	pg/g	9.44
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		20.3	pg/g	0.944
36088-22-9	Total Pentachlorodibenzo-p-dioxin		4.89	pg/g	4.72
34465-46-8	Total Hexachlorodibenzo-p-dioxin		32.2	pg/g	4.72
37871-00-4	Total Heptachlorodibenzo-p-dioxin		95.3	pg/g	4.72
30402-14-3	Total Tetrachlorodibenzofuran		1.03	pg/g	0.944
30402-15-4	Total Pentachlorodibenzofuran	U	4.72	pg/g	4.72
55684-94-1	Total Hexachlorodibenzofuran	U	4.72	pg/g	4.72
38998-75-3	Total Heptachlorodibenzofuran	U	4.72	pg/g	4.72
3333-30-0	TEQ WHO2005 ND=0		0.644	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.00	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		161	189	pg/g	85.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		166	189	pg/g	88.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		158	189	pg/g	83.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		154	189	pg/g	81.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		154	189	pg/g	81.8	(23%-140%)
13C-OCDD		224	378	pg/g	59.4	(17%-157%)
13C-2,3,7,8-TCDF		147	189	pg/g	77.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		154	189	pg/g	81.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		153	189	pg/g	80.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		132	189	pg/g	69.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		130	189	pg/g	68.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		133	189	pg/g	70.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		137	189	pg/g	72.7	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796008	<b>Date Collected:</b> 09/10/2016 12:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 19.3
<b>Client ID:</b> VC-A-04-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 00:10	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-12		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 13.13 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			117	189	pg/g	61.7 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			147	189	pg/g	77.8 (26%-138%)
37Cl-2,3,7,8-TCDD			16.2	18.9	pg/g	85.6 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796009	<b>Date Collected:</b> 09/10/2016 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 26.2
<b>Client ID:</b> VC-A-04-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 00:58	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 14.21 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.953	pg/g	0.953
40321-76-4	1,2,3,7,8-PeCDD	U	4.77	pg/g	4.77
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.77	pg/g	4.77
57653-85-7	1,2,3,6,7,8-HxCDD		40.6	pg/g	4.77
19408-74-3	1,2,3,7,8,9-HxCDD		20.5	pg/g	4.77
35822-46-9	1,2,3,4,6,7,8-HpCDD		690	pg/g	4.77
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	5270	pg/g	9.53
51207-31-9	2,3,7,8-TCDF	U	.953	pg/g	0.953
57117-41-6	1,2,3,7,8-PeCDF	U	4.77	pg/g	4.77
57117-31-4	2,3,4,7,8-PeCDF	U	4.77	pg/g	4.77
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.77	pg/g	4.77
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.77	pg/g	4.77
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.77	pg/g	4.77
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.77	pg/g	4.77
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.77	pg/g	4.77
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.77	pg/g	4.77
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.53	pg/g	9.53
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		166	pg/g	0.953
36088-22-9	Total Pentachlorodibenzo-p-dioxin		182	pg/g	4.77
34465-46-8	Total Hexachlorodibenzo-p-dioxin		708	pg/g	4.77
37871-00-4	Total Heptachlorodibenzo-p-dioxin		1350	pg/g	4.77
30402-14-3	Total Tetrachlorodibenzofuran	U	.953	pg/g	0.953
30402-15-4	Total Pentachlorodibenzofuran	U	4.77	pg/g	4.77
55684-94-1	Total Hexachlorodibenzofuran	U	4.77	pg/g	4.77
38998-75-3	Total Heptachlorodibenzofuran	U	4.77	pg/g	4.77
3333-30-0	TEQ WHO2005 ND=0		14.6	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		19.5	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		152	191	pg/g	79.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		156	191	pg/g	81.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		147	191	pg/g	77.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		140	191	pg/g	73.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		146	191	pg/g	76.6	(23%-140%)
13C-OCDD		214	381	pg/g	56.2	(17%-157%)
13C-2,3,7,8-TCDF		135	191	pg/g	71.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		142	191	pg/g	74.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		142	191	pg/g	74.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		123	191	pg/g	64.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		121	191	pg/g	63.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		123	191	pg/g	64.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		130	191	pg/g	68.3	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796009	<b>Date Collected:</b> 09/10/2016 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 26.2
<b>Client ID:</b> VC-A-04-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 00:58	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 14.21 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			108	191	pg/g	56.6 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			135	191	pg/g	70.7 (26%-138%)
37Cl-2,3,7,8-TCDD			15.5	19.1	pg/g	81.1 (35%-197%)

**Comments:**

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796010	<b>Date Collected:</b> 09/10/2016 13:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 14.2
<b>Client ID:</b> VC-A-05		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 01:45	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-14		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.16 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.958	pg/g	0.958
40321-76-4	1,2,3,7,8-PeCDD	U	4.79	pg/g	4.79
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.79	pg/g	4.79
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.79	pg/g	4.79
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.79	pg/g	4.79
35822-46-9	1,2,3,4,6,7,8-HpCDD		12.6	pg/g	4.79
3268-87-9	1,2,3,4,6,7,8,9-OCDD		274	pg/g	9.58
51207-31-9	2,3,7,8-TCDF	U	.958	pg/g	0.958
57117-41-6	1,2,3,7,8-PeCDF	U	4.79	pg/g	4.79
57117-31-4	2,3,4,7,8-PeCDF	U	4.79	pg/g	4.79
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.79	pg/g	4.79
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.79	pg/g	4.79
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.79	pg/g	4.79
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.79	pg/g	4.79
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.79	pg/g	4.79
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.79	pg/g	4.79
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.58	pg/g	9.58
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		9.87	pg/g	0.958
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.79	pg/g	4.79
34465-46-8	Total Hexachlorodibenzo-p-dioxin		16.5	pg/g	4.79
37871-00-4	Total Heptachlorodibenzo-p-dioxin		52.0	pg/g	4.79
30402-14-3	Total Tetrachlorodibenzofuran	U	.958	pg/g	0.958
30402-15-4	Total Pentachlorodibenzofuran	U	4.79	pg/g	4.79
55684-94-1	Total Hexachlorodibenzofuran	U	4.79	pg/g	4.79
38998-75-3	Total Heptachlorodibenzofuran	U	4.79	pg/g	4.79
3333-30-0	TEQ WHO2005 ND=0		0.208	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.65	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	192	pg/g	77.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		158	192	pg/g	82.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		143	192	pg/g	74.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		137	192	pg/g	71.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		142	192	pg/g	74.2	(23%-140%)
13C-OCDD		205	383	pg/g	53.6	(17%-157%)
13C-2,3,7,8-TCDF		135	192	pg/g	70.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		146	192	pg/g	76.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		147	192	pg/g	76.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		120	192	pg/g	62.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		117	192	pg/g	61.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		121	192	pg/g	63.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		126	192	pg/g	65.5	(29%-147%)



**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796010	<b>Date Collected:</b> 09/10/2016 13:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 14.2
<b>Client ID:</b> VC-A-05		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 01:45	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-14		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.16 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			109	192	pg/g	56.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			133	192	pg/g	69.4 (26%-138%)
37Cl-2,3,7,8-TCDD			14.4	19.2	pg/g	75.1 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796011	<b>Date Collected:</b> 09/10/2016 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.5
<b>Client ID:</b> VC-A-06-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 04:21	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B_2-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.17 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.949	pg/g	0.949
40321-76-4	1,2,3,7,8-PeCDD	U	4.75	pg/g	4.75
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.75	pg/g	4.75
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.75	pg/g	4.75
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.75	pg/g	4.75
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	4.75	pg/g	4.75
3268-87-9	1,2,3,4,6,7,8,9-OCDD		47.6	pg/g	9.49
51207-31-9	2,3,7,8-TCDF	U	.949	pg/g	0.949
57117-41-6	1,2,3,7,8-PeCDF	U	4.75	pg/g	4.75
57117-31-4	2,3,4,7,8-PeCDF	U	4.75	pg/g	4.75
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.75	pg/g	4.75
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.75	pg/g	4.75
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.75	pg/g	4.75
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.75	pg/g	4.75
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.75	pg/g	4.75
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.75	pg/g	4.75
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.49	pg/g	9.49
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.949	pg/g	0.949
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.75	pg/g	4.75
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	4.75	pg/g	4.75
37871-00-4	Total Heptachlorodibenzo-p-dioxin		8.04	pg/g	4.75
30402-14-3	Total Tetrachlorodibenzofuran	U	.949	pg/g	0.949
30402-15-4	Total Pentachlorodibenzofuran	U	4.75	pg/g	4.75
55684-94-1	Total Hexachlorodibenzofuran	U	4.75	pg/g	4.75
38998-75-3	Total Heptachlorodibenzofuran	U	4.75	pg/g	4.75
3333-30-0	TEQ WHO2005 ND=0		0.0143	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.43	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		150	190	pg/g	78.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		153	190	pg/g	80.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		161	190	pg/g	84.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		159	190	pg/g	83.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		148	190	pg/g	77.8	(23%-140%)
13C-OCDD		202	380	pg/g	53.2	(17%-157%)
13C-2,3,7,8-TCDF		133	190	pg/g	70.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		133	190	pg/g	69.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		138	190	pg/g	72.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		134	190	pg/g	70.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		133	190	pg/g	69.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		134	190	pg/g	70.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		126	190	pg/g	66.6	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796011	<b>Date Collected:</b> 09/10/2016 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.5
<b>Client ID:</b> VC-A-06-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 04:21	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B_2-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.17 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			115	190	pg/g	60.7 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			136	190	pg/g	71.5 (26%-138%)
37Cl-2,3,7,8-TCDD			16.3	19.0	pg/g	85.6 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796012	<b>Date Collected:</b> 09/13/2016 10:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-06-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 05:08	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.83 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	.893	pg/g	0.893
40321-76-4	1,2,3,7,8-PeCDD	U	4.47	pg/g	4.47
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.47	pg/g	4.47
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.47	pg/g	4.47
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.47	pg/g	4.47
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	4.47	pg/g	4.47
3268-87-9	1,2,3,4,6,7,8,9-OCDD		16.9	pg/g	8.93
51207-31-9	2,3,7,8-TCDF	U	.893	pg/g	0.893
57117-41-6	1,2,3,7,8-PeCDF	U	4.47	pg/g	4.47
57117-31-4	2,3,4,7,8-PeCDF	U	4.47	pg/g	4.47
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.47	pg/g	4.47
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.47	pg/g	4.47
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.47	pg/g	4.47
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.47	pg/g	4.47
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.47	pg/g	4.47
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.47	pg/g	4.47
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	8.93	pg/g	8.93
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.893	pg/g	0.893
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.47	pg/g	4.47
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	4.47	pg/g	4.47
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	4.47	pg/g	4.47
30402-14-3	Total Tetrachlorodibenzofuran	U	.893	pg/g	0.893
30402-15-4	Total Pentachlorodibenzofuran	U	4.47	pg/g	4.47
55684-94-1	Total Hexachlorodibenzofuran	U	4.47	pg/g	4.47
38998-75-3	Total Heptachlorodibenzofuran	U	4.47	pg/g	4.47
3333-30-0	TEQ WHO2005 ND=0		0.00508	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.10	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		127	179	pg/g	71.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		126	179	pg/g	70.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		124	179	pg/g	69.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		131	179	pg/g	73.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		117	179	pg/g	65.5	(23%-140%)
13C-OCDD		169	357	pg/g	47.3	(17%-157%)
13C-2,3,7,8-TCDF		113	179	pg/g	63.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		112	179	pg/g	62.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		116	179	pg/g	65.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		108	179	pg/g	60.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		105	179	pg/g	58.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		108	179	pg/g	60.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		102	179	pg/g	56.9	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796012	<b>Date Collected:</b> 09/13/2016 10:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-06-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/04/2016 05:08	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.83 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			94.2	179	pg/g	52.7 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			108	179	pg/g	60.2 (26%-138%)
37Cl-2,3,7,8-TCDD			14.4	17.9	pg/g	80.7 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

# Quality Control Summary

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017015	LCS for batch 32937	13C-2,3,7,8-TCDD		77.8	(20%-175%)
		13C-1,2,3,7,8-PeCDD		81.8	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		76.7	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		78.6	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		77.4	(22%-166%)
		13C-OCDD		53.1	(13%-199%)
		13C-2,3,7,8-TCDF		70.6	(22%-152%)
		13C-1,2,3,7,8-PeCDF		71.8	(21%-192%)
		13C-2,3,4,7,8-PeCDF		74.9	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		65.3	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		66.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		68.5	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		69.8	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		58.9	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		70.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		86.4	(31%-191%)
12017016	LCSD for batch 32937	13C-2,3,7,8-TCDD		85.8	(20%-175%)
		13C-1,2,3,7,8-PeCDD		87.7	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		78.7	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		80.3	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		76.4	(22%-166%)
		13C-OCDD		52.3	(13%-199%)
		13C-2,3,7,8-TCDF		76.9	(22%-152%)
		13C-1,2,3,7,8-PeCDF		81.0	(21%-192%)
		13C-2,3,4,7,8-PeCDF		81.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		67.3	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		67.7	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		69.3	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		70.0	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		59.1	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		71.1	(20%-186%)
		37Cl-2,3,7,8-TCDD		91.2	(31%-191%)
12017014	MB for batch 32937	13C-2,3,7,8-TCDD		82.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.0	(23%-140%)
		13C-OCDD		60.4	(17%-157%)
		13C-2,3,7,8-TCDF		74.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		78.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		79.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		70.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		64.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		77.6	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.2	(35%-197%)
9796001	VC-A-01	13C-2,3,7,8-TCDD		82.2	(25%-164%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796001	VC-A-01	13C-1,2,3,7,8-PeCDD		86.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		79.6	(23%-140%)
		13C-OCDD		53.0	(17%-157%)
		13C-2,3,7,8-TCDF		74.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		79.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		79.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		68.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		69.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		68.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		70.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		58.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		90.2	(35%-197%)
9796002	VC-A-02	13C-2,3,7,8-TCDD		79.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		83.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		71.3	(23%-140%)
		13C-OCDD		50.8	(17%-157%)
		13C-2,3,7,8-TCDF		71.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		75.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		60.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		60.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		62.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		63.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		53.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		66.0	(26%-138%)
37Cl-2,3,7,8-TCDD		87.6	(35%-197%)		
9796003	VC-A-03	13C-2,3,7,8-TCDD		77.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		82.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		75.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		74.8	(23%-140%)
		13C-OCDD		56.8	(17%-157%)
		13C-2,3,7,8-TCDF		69.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		76.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		65.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		64.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		67.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		67.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		58.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		70.5	(26%-138%)
37Cl-2,3,7,8-TCDD		79.2	(35%-197%)		
9796004	VC-A-03 DUP	13C-2,3,7,8-TCDD		89.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		92.9	(25%-181%)



**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796004	VC-A-03 DUP	13C-1,2,3,4,7,8-HxCDD		76.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		73.5	(23%-140%)
		13C-OCDD		52.5	(17%-157%)
		13C-2,3,7,8-TCDF		78.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		85.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		66.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		64.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		67.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		68.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		58.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		69.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		97.4	(35%-197%)
		9796005	VC-A-03 DUP MS	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				84.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				80.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				74.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				76.1	(23%-140%)
13C-OCDD				51.7	(17%-157%)
13C-2,3,7,8-TCDF				73.6	(24%-169%)
13C-1,2,3,7,8-PeCDF				79.1	(24%-185%)
13C-2,3,4,7,8-PeCDF				78.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				66.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				65.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				65.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				67.5	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				56.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				70.7	(26%-138%)
37Cl-2,3,7,8-TCDD		78.1	(35%-197%)		
9796006	VC-A-03 DUP MSD	13C-2,3,7,8-TCDD		83.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		89.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		77.6	(23%-140%)
		13C-OCDD		52.7	(17%-157%)
		13C-2,3,7,8-TCDF		75.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		82.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		69.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		66.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		70.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		71.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		58.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.4	(26%-138%)
37Cl-2,3,7,8-TCDD		89.2	(35%-197%)		
9796007	VC-A-04-S1	13C-2,3,7,8-TCDD		82.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		78.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.1	(32%-141%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796007	VC-A-04-S1	13C-1,2,3,6,7,8-HxCDD		77.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		76.3	(23%-140%)
		13C-OCDD		57.0	(17%-157%)
		13C-2,3,7,8-TCDF		74.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		71.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		72.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		69.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		64.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		67.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		67.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		59.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		71.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		84.4	(35%-197%)
		9796008	VC-A-04-S2	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				88.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				83.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				81.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				81.8	(23%-140%)
13C-OCDD				59.4	(17%-157%)
13C-2,3,7,8-TCDF				77.6	(24%-169%)
13C-1,2,3,7,8-PeCDF				81.5	(24%-185%)
13C-2,3,4,7,8-PeCDF				80.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				69.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				68.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				70.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				72.7	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				61.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		77.8	(26%-138%)		
37Cl-2,3,7,8-TCDD		85.6	(35%-197%)		
9796009	VC-A-04-S3	13C-2,3,7,8-TCDD		79.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		76.6	(23%-140%)
		13C-OCDD		56.2	(17%-157%)
		13C-2,3,7,8-TCDF		71.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		74.4	(24%-185%)
		13C-2,3,4,7,8-PeCDF		74.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		64.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		63.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		64.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		68.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		56.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		70.7	(26%-138%)		
37Cl-2,3,7,8-TCDD		81.1	(35%-197%)		
9796010	VC-A-05	13C-2,3,7,8-TCDD		77.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		82.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		71.4	(28%-130%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796010	VC-A-05	13C-1,2,3,4,6,7,8-HpCDD		74.2	(23%-140%)
		13C-OCDD		53.6	(17%-157%)
		13C-2,3,7,8-TCDF		70.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		76.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		62.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		61.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		63.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		65.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		56.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		69.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		75.1	(35%-197%)
		9796011	VC-A-06-S1	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				80.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				84.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				83.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				77.8	(23%-140%)
13C-OCDD				53.2	(17%-157%)
13C-2,3,7,8-TCDF				70.0	(24%-169%)
13C-1,2,3,7,8-PeCDF				69.8	(24%-185%)
13C-2,3,4,7,8-PeCDF				72.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				70.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				69.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				70.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				66.6	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				60.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				71.5	(26%-138%)
37Cl-2,3,7,8-TCDD		85.6	(35%-197%)		
9796012	VC-A-06-S2	13C-2,3,7,8-TCDD		71.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		70.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		69.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		73.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		65.5	(23%-140%)
		13C-OCDD		47.3	(17%-157%)
		13C-2,3,7,8-TCDF		63.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		62.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		65.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		60.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		58.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		60.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		56.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		52.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		60.2	(26%-138%)
37Cl-2,3,7,8-TCDD		80.7	(35%-197%)		

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

<b>SDG Number:</b> L1629122	<b>Sample Type:</b> Laboratory Control Sample
<b>Client ID:</b> LCS for batch 32937	<b>Matrix:</b> SOIL
<b>Lab Sample ID:</b> 12017015	
<b>Instrument:</b> HRP750	<b>Analysis Date:</b> 10/03/2016 15:45
<b>Analyst:</b> JTF	<b>Dilution:</b> 1
	<b>Prep Batch ID:</b> 32937
	<b>Batch ID:</b> 32939

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	20.0	18.1	90.7	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	100	91.4	91.4	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	100	91.0	91	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	100	94.4	94.4	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	100	97.0	97	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	100	90.0	90	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	200	187	93.7	78-144
51207-31-9	LCS 2,3,7,8-TCDF	20.0	17.8	88.8	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	100	89.9	89.9	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	100	86.3	86.3	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	100	92.6	92.6	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	100	94.7	94.7	84-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	100	93.6	93.6	70-156
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	100	91.1	91.1	78-130
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	100	93.0	93	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	100	92.8	92.8	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	200	198	99	63-170

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1629122      **Sample Type:** Laboratory Control Sample Duplicate  
**Client ID:** LCSD for batch 32937      **Matrix:** SOIL  
**Lab Sample ID:** 12017016  
**Instrument:** HRP750      **Analysis Date:** 10/03/2016 17:05      **Dilution:** 1  
**Analyst:** JTF      **Prep Batch ID:** 32937  
**Batch ID:** 32939

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	20.0	18.9	94.4	67-158	3.99	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	100	95.6	95.6	70-142	4.50	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	100	94.8	94.8	70-164	4.01	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	100	86.4	86.4	76-134	8.75	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	100	90.4	90.4	64-162	6.98	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	100	93.4	93.4	70-140	3.66	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	200	192	96.2	78-144	2.61	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	20.0	18.3	91.4	75-158	2.96	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	100	92.5	92.5	80-134	2.84	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	100	89.6	89.6	68-160	3.73	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	100	92.7	92.7	72-134	0.117	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	100	95.6	95.6	84-130	0.906	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HxCDF	100	94.0	94	70-156	0.446	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	100	93.8	93.8	78-130	2.93	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	100	94.4	94.4	82-122	1.51	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	100	95.3	95.3	78-138	2.59	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	200	196	97.9	63-170	1.07	0-20

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1629122  
**Client ID:** VC-A-03 DUP MS  
**Lab Sample ID:** 9796005  
**Instrument:** HRP750  
**Analyst:** JTF

**Sample Type:** Matrix Spike  
**Matrix:** SOIL  
**%Moisture:** 13.1  
**Analysis Date:** 10/03/2016 21:49  
**Prep Batch ID:** 32937  
**Batch ID:** 32939  
**Dilution:** 1

CAS No.	Parmname	Amount Added		Spike Conc.	Recovery %	Acceptance Limits	
		pg/g	U	pg/g			
1746-01-6	MS	2,3,7,8-TCDD	18.3	U	17.5	95.8	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	91.6	U	87.8	95.8	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	91.6	U	85.7	93.6	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	91.6	U	84.5	92.3	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	91.6	U	85.4	93.3	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	91.6		98.7	92.1	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	183		334	75.2	70-130
51207-31-9	MS	2,3,7,8-TCDF	18.3	U	16.6	90.7	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	91.6	U	84.4	92.1	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	91.6	U	83.1	90.7	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	91.6	U	85.6	93.5	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	91.6	U	88.4	96.5	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	91.6	U	88.6	96.7	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	91.6	U	88.7	96.8	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	91.6	U	86.8	94.8	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	91.6	U	86.7	94.7	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	183	U	180	98.2	70-130

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

<b>SDG Number:</b> L1629122	<b>Sample Type:</b> Matrix Spike Duplicate
<b>Client ID:</b> VC-A-03 DUP MSD	<b>Matrix:</b> SOIL
<b>Lab Sample ID:</b> 9796006	<b>%Moisture:</b> 13.1
<b>Instrument:</b> HRP750	<b>Analysis Date:</b> 10/03/2016 22:36
<b>Analyst:</b> JTF	<b>Dilution:</b> 1
	<b>Prep Batch ID:</b> 32937
	<b>Batch ID:</b> 32939

CAS No.	Parmname	Amount Added		Spike Conc.		Recovery	Acceptance	RPD	Acceptance	
		pg/g	U	pg/g	U	%	Limits	%	Limits	
1746-01-6	MSD	2,3,7,8-TCDD	18.3	U	17.0		92.4	70-130	3.42	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	91.7	U	83.5		91	70-130	4.99	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	91.7	U	83.7		91.3	70-130	2.34	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	91.7	U	80.6		87.9	70-130	4.76	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	91.7	U	83.7		91.3	70-130	1.99	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	91.7		105		99.3	70-130	6.53	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	183		401		112	70-130	18.3	0-20
51207-31-9	MSD	2,3,7,8-TCDF	18.3	U	16.1		87.7	70-130	3.19	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	91.7	U	81.7		89.1	70-130	3.25	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	91.7	U	79.7		86.9	70-130	4.13	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	91.7	U	82.6		90	70-130	3.65	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	91.7	U	85.2		92.9	70-130	3.72	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	91.7	U	83.4		90.9	70-130	6.06	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	91.7	U	82.8		90.3	70-130	6.81	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	91.7	U	85.4		93.2	70-130	1.60	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	91.7	U	85.0		92.7	70-130	2.05	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	183	U	177		96.7	70-130	1.39	0-20

## Method Blank Summary

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SDG Number: L1629122  
 Client ID: MB for batch 32937  
 Lab Sample ID: 12017014  
 Column:

Client: ALPH001  
 Instrument ID: HRP750  
 Prep Date: 02-OCT-16

Matrix: SOIL  
 Data File: A03OCT16B-4  
 Analyzed: 10/03/16 17:53

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 32937	12017015	A03OCT16B-2	10/03/16	1545
02 LCSD for batch 32937	12017016	A03OCT16B-3	10/03/16	1705
03 VC-A-01	9796001	A03OCT16B-5	10/03/16	1840
04 VC-A-02	9796002	A03OCT16B-6	10/03/16	1927
05 VC-A-03	9796003	A03OCT16B-7	10/03/16	2014
06 VC-A-03 DUP	9796004	A03OCT16B-8	10/03/16	2101
07 VC-A-03 DUP MS	9796005	A03OCT16B-9	10/03/16	2149
08 VC-A-03 DUP MSD	9796006	A03OCT16B-10	10/03/16	2236
09 VC-A-04-S1	9796007	A03OCT16B-11	10/03/16	2323
10 VC-A-04-S2	9796008	A03OCT16B-12	10/04/16	0010
11 VC-A-04-S3	9796009	A03OCT16B-13	10/04/16	0058
12 VC-A-05	9796010	A03OCT16B-14	10/04/16	0145
13 VC-A-06-S1	9796011	A03OCT16B_2-2	10/04/16	0421
14 VC-A-06-S2	9796012	A03OCT16B_2-3	10/04/16	0508



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017014		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32937		
<b>Client ID:</b> MB for batch 32937		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 17:53	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	5	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	10	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	5	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	5	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	1	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.70	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	200	pg/g	82.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		174	200	pg/g	86.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	200	pg/g	79.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		168	200	pg/g	83.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		166	200	pg/g	83.0	(23%-140%)
13C-OCDD		242	400	pg/g	60.4	(17%-157%)
13C-2,3,7,8-TCDF		150	200	pg/g	74.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		158	200	pg/g	78.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		160	200	pg/g	79.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		140	200	pg/g	70.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		140	200	pg/g	70.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		145	200	pg/g	72.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		147	200	pg/g	73.3	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017014		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32937		
<b>Client ID:</b> MB for batch 32937		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 17:53	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			129	200	pg/g	64.5 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			155	200	pg/g	77.6 (26%-138%)
37Cl-2,3,7,8-TCDD			18.2	20.0	pg/g	91.2 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017015		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32937		
<b>Client ID:</b> LCS for batch 32937		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 15:45	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		18.1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		91.4	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		91.0	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		94.4	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		97.0	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		90.0	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		187	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		17.8	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		89.9	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		86.3	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		92.6	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		94.7	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		93.6	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		91.1	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		93.0	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		92.8	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		198	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	200	pg/g	77.8	(20%-175%)
13C-1,2,3,7,8-PeCDD		164	200	pg/g	81.8	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		153	200	pg/g	76.7	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		157	200	pg/g	78.6	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		155	200	pg/g	77.4	(22%-166%)
13C-OCDD		212	400	pg/g	53.1	(13%-199%)
13C-2,3,7,8-TCDF		141	200	pg/g	70.6	(22%-152%)
13C-1,2,3,7,8-PeCDF		144	200	pg/g	71.8	(21%-192%)
13C-2,3,4,7,8-PeCDF		150	200	pg/g	74.9	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		131	200	pg/g	65.3	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		133	200	pg/g	66.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		137	200	pg/g	68.5	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		140	200	pg/g	69.8	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		118	200	pg/g	58.9	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		141	200	pg/g	70.7	(20%-186%)
37Cl-2,3,7,8-TCDD		17.3	20.0	pg/g	86.4	(31%-191%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017016		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32937		
<b>Client ID:</b> LCSD for batch 32937		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 17:05	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		18.9	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		95.6	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		94.8	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		86.4	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		90.4	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		93.4	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		192	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		18.3	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		92.5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		89.6	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		92.7	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		95.6	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		94.0	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		93.8	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		94.4	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		95.3	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		196	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		172	200	pg/g	85.8	(20%-175%)
13C-1,2,3,7,8-PeCDD		175	200	pg/g	87.7	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		157	200	pg/g	78.7	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		161	200	pg/g	80.3	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		153	200	pg/g	76.4	(22%-166%)
13C-OCDD		209	400	pg/g	52.3	(13%-199%)
13C-2,3,7,8-TCDF		154	200	pg/g	76.9	(22%-152%)
13C-1,2,3,7,8-PeCDF		162	200	pg/g	81.0	(21%-192%)
13C-2,3,4,7,8-PeCDF		163	200	pg/g	81.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		135	200	pg/g	67.3	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		135	200	pg/g	67.7	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		139	200	pg/g	69.3	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		140	200	pg/g	70.0	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		118	200	pg/g	59.1	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		142	200	pg/g	71.1	(20%-186%)
37Cl-2,3,7,8-TCDD		18.2	20.0	pg/g	91.2	(31%-191%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796005	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> MS for 9796004 (VC-A-03 DUP)	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP MS		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 21:49	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.57 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		17.5	pg/g	0.916
40321-76-4	1,2,3,7,8-PeCDD		87.8	pg/g	4.58
39227-28-6	1,2,3,4,7,8-HxCDD		85.7	pg/g	4.58
57653-85-7	1,2,3,6,7,8-HxCDD		84.5	pg/g	4.58
19408-74-3	1,2,3,7,8,9-HxCDD		85.4	pg/g	4.58
35822-46-9	1,2,3,4,6,7,8-HpCDD		98.7	pg/g	4.58
3268-87-9	1,2,3,4,6,7,8,9-OCDD		334	pg/g	9.16
51207-31-9	2,3,7,8-TCDF		16.6	pg/g	0.916
57117-41-6	1,2,3,7,8-PeCDF		84.4	pg/g	4.58
57117-31-4	2,3,4,7,8-PeCDF		83.1	pg/g	4.58
70648-26-9	1,2,3,4,7,8-HxCDF		85.6	pg/g	4.58
57117-44-9	1,2,3,6,7,8-HxCDF		88.4	pg/g	4.58
60851-34-5	2,3,4,6,7,8-HxCDF		88.6	pg/g	4.58
72918-21-9	1,2,3,7,8,9-HxCDF		88.7	pg/g	4.58
67562-39-4	1,2,3,4,6,7,8-HpCDF		86.8	pg/g	4.58
55673-89-7	1,2,3,4,7,8,9-HpCDF		86.7	pg/g	4.58
39001-02-0	1,2,3,4,6,7,8,9-OCDF		180	pg/g	9.16

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	183	pg/g	81.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		155	183	pg/g	84.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		148	183	pg/g	80.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		137	183	pg/g	74.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		139	183	pg/g	76.1	(23%-140%)
13C-OCDD		189	366	pg/g	51.7	(17%-157%)
13C-2,3,7,8-TCDF		135	183	pg/g	73.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		145	183	pg/g	79.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		144	183	pg/g	78.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		123	183	pg/g	66.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		120	183	pg/g	65.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		120	183	pg/g	65.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		124	183	pg/g	67.5	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		103	183	pg/g	56.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		129	183	pg/g	70.7	(26%-138%)
37Cl-2,3,7,8-TCDD		14.3	18.3	pg/g	78.1	(35%-197%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796006	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> MSD for 9796004 (VC-A-03 DUP)	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP MSD		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32939	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 10/03/2016 22:36	<b>Analyst:</b> JTF	<b>Instrument:</b> HRP750
<b>Data File:</b> A03OCT16B-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32937	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-OCT-16	<b>Prep Aliquot:</b> 12.55 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		17.0	pg/g	0.917
40321-76-4	1,2,3,7,8-PeCDD		83.5	pg/g	4.59
39227-28-6	1,2,3,4,7,8-HxCDD		83.7	pg/g	4.59
57653-85-7	1,2,3,6,7,8-HxCDD		80.6	pg/g	4.59
19408-74-3	1,2,3,7,8,9-HxCDD		83.7	pg/g	4.59
35822-46-9	1,2,3,4,6,7,8-HpCDD		105	pg/g	4.59
3268-87-9	1,2,3,4,6,7,8,9-OCDD		401	pg/g	9.17
51207-31-9	2,3,7,8-TCDF		16.1	pg/g	0.917
57117-41-6	1,2,3,7,8-PeCDF		81.7	pg/g	4.59
57117-31-4	2,3,4,7,8-PeCDF		79.7	pg/g	4.59
70648-26-9	1,2,3,4,7,8-HxCDF		82.6	pg/g	4.59
57117-44-9	1,2,3,6,7,8-HxCDF		85.2	pg/g	4.59
60851-34-5	2,3,4,6,7,8-HxCDF		83.4	pg/g	4.59
72918-21-9	1,2,3,7,8,9-HxCDF		82.8	pg/g	4.59
67562-39-4	1,2,3,4,6,7,8-HpCDF		85.4	pg/g	4.59
55673-89-7	1,2,3,4,7,8,9-HpCDF		85.0	pg/g	4.59
39001-02-0	1,2,3,4,6,7,8,9-OCDF		177	pg/g	9.17

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		153	183	pg/g	83.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		164	183	pg/g	89.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		147	183	pg/g	80.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		148	183	pg/g	80.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		142	183	pg/g	77.6	(23%-140%)
13C-OCDD		193	367	pg/g	52.7	(17%-157%)
13C-2,3,7,8-TCDF		139	183	pg/g	75.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		151	183	pg/g	82.4	(24%-185%)
13C-2,3,4,7,8-PeCDF		150	183	pg/g	81.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		127	183	pg/g	69.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		121	183	pg/g	66.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		129	183	pg/g	70.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		131	183	pg/g	71.2	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		107	183	pg/g	58.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		135	183	pg/g	73.4	(26%-138%)
37Cl-2,3,7,8-TCDD		16.4	18.3	pg/g	89.2	(35%-197%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

# **PCB Congeners Analysis**

# Case Narrative



**PCBC Case Narrative**  
**Alpha Analytical Laboratory (ALPH)**  
**SDG L1629122**  
**Work Order 9796**

**Method/Analysis Information**

**Product:** PCB Congeners by EPA Method 1668A in Solids  
**Analytical Method:** EPA Method 1668A  
**Extraction Method:** SW846 3540C  
**Analytical Batch Number:** 32979  
**Clean Up Batch Number:** 32978  
**Extraction Batch Number:** 32977

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

<b>Sample ID</b>	<b>Client ID</b>
9796001	VC-A-01
9796002	VC-A-02
9796003	VC-A-03
9796004	VC-A-03 DUP
9796005	9796004(VC-A-03 DUP) Matrix Spike (MS)
9796006	9796004(VC-A-03 DUP) Matrix Spike Duplicate (MSD)
9796007	VC-A-04-S1
9796008	VC-A-04-S2
9796009	VC-A-04-S3
9796010	VC-A-05
9796011	VC-A-06-S1
9796012	VC-A-06-S2
12017041	Method Blank (MB)
12017042	Laboratory Control Sample (LCS)
12017043	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

### **Calibration Information**

#### **Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

#### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

### **Quality Control (QC) Information**

#### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Surrogate Recoveries**

One surrogate recovered outside the acceptance limits. 9796001 (VC-A-01), 9796002 (VC-A-02), 9796003 (VC-A-03), 9796004 (VC-A-03 DUP), 9796005 (VC-A-03 DUP), 9796006 (VC-A-03 DUP), 9796007 (VC-A-04-S1), 9796008 (VC-A-04-S2), 9796010 (VC-A-05), 9796011 (VC-A-06-S1) and 9796012 (VC-A-06-S2).

Two surrogates recovered outside the acceptance limits. 9796009 (VC-A-04-S3).

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

#### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

#### **QC Sample Designation**

Sample 9796004 (VC-A-03 DUP) was selected for analysis as the matrix spike and matrix spike duplicate.

#### **Matrix Spike (MS) Recovery Statement**

The MS recoveries were within the established acceptance limits.

#### **Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD recoveries were within the established acceptance limits.

**MS/MSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the MS and MSD met the acceptance limits.

**Technical Information****Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

**Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

**Sample Dilutions**

The samples in this SDG did not require dilutions.

**Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

**Miscellaneous Information****Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

**Manual Integrations**

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

**System Configuration**

This analysis was performed on the following instrument configuration:

<b>Instrument ID</b>	<b>Instrument</b>	<b>System Configuration</b>	<b>Column ID</b>	<b>Column Description</b>
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These

hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary

## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Certificate of Analysis Report for

ALPH001 Alpha Analytical Laboratory

Client SDG: L1629122 CFA Work Order: 9796

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- K Estimated Maximum Possible Concentration
- Q Quantitative Interference; value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 18 OCT 2016

Title: Group Leader

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796001  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-01  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 17:59  
**Data File:** c13oct16a-5  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/10/2016 09:00  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 13.21 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 18.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.85	pg/g	1.85
2051-61-8	2-MoCB	U	1.85	pg/g	1.85
2051-62-9	3-MoCB	U	1.85	pg/g	1.85
13029-08-8	4-DiCB	QU	1.85	pg/g	1.85
16605-91-7	5-DiCB	U	1.85	pg/g	1.85
25569-80-6	6-DiCB	U	1.85	pg/g	1.85
33284-50-3	7-DiCB	U	1.85	pg/g	1.85
34883-43-7	8-DiCB	U	1.85	pg/g	1.85
34883-39-1	9-DiCB	U	1.85	pg/g	1.85
33146-45-1	10-DiCB	U	1.85	pg/g	1.85
2050-67-1	11-DiCB	B	5.17	pg/g	3.70
2974-92-7	12-DiCB	CU	3.7	pg/g	3.70
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.85	pg/g	1.85
2050-68-2	15-DiCB	U	1.85	pg/g	1.85
38444-78-9	16-TrCB	U	1.85	pg/g	1.85
37680-66-3	17-TrCB	U	1.85	pg/g	1.85
37680-65-2	18-TrCB	CU	3.7	pg/g	3.70
38444-73-4	19-TrCB	U	1.85	pg/g	1.85
38444-84-7	20-TrCB	CU	3.7	pg/g	3.70
55702-46-0	21-TrCB	CU	3.7	pg/g	3.70
38444-85-8	22-TrCB	U	1.85	pg/g	1.85
55720-44-0	23-TrCB	U	1.85	pg/g	1.85
55702-45-9	24-TrCB	U	1.85	pg/g	1.85
55712-37-3	25-TrCB	U	1.85	pg/g	1.85
38444-81-4	26-TrCB	CU	3.7	pg/g	3.70
38444-76-7	27-TrCB	U	1.85	pg/g	1.85
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.85	pg/g	1.85
38444-77-8	32-TrCB	U	1.85	pg/g	1.85

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796001	<b>Date Collected:</b> 09/10/2016 09:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.1
<b>Client ID:</b> VC-A-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 17:59	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.21 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.85	pg/g	1.85
37680-69-6	35-TrCB	U	1.85	pg/g	1.85
38444-87-0	36-TrCB	U	1.85	pg/g	1.85
38444-90-5	37-TrCB	U	1.85	pg/g	1.85
53555-66-1	38-TrCB	U	1.85	pg/g	1.85
38444-88-1	39-TrCB	U	1.85	pg/g	1.85
38444-93-8	40-TeCB	CU	3.7	pg/g	3.70
52663-59-9	41-TeCB	U	1.85	pg/g	1.85
36559-22-5	42-TeCB	U	1.85	pg/g	1.85
70362-46-8	43-TeCB	U	1.85	pg/g	1.85
41464-39-5	44-TeCB	CU	5.54	pg/g	5.54
70362-45-7	45-TeCB	CU	3.7	pg/g	3.70
41464-47-5	46-TeCB	U	1.85	pg/g	1.85
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.85	pg/g	1.85
41464-40-8	49-TeCB	CU	3.7	pg/g	3.70
62796-65-0	50-TeCB	CU	3.7	pg/g	3.70
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.85	pg/g	1.85
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.85	pg/g	1.85
74338-24-2	55-TeCB	U	1.85	pg/g	1.85
41464-43-1	56-TeCB	U	1.85	pg/g	1.85
70424-67-8	57-TeCB	U	1.85	pg/g	1.85
41464-49-7	58-TeCB	U	1.85	pg/g	1.85
74472-33-6	59-TeCB	CU	5.54	pg/g	5.54
33025-41-1	60-TeCB	U	1.85	pg/g	1.85
33284-53-6	61-TeCB	CU	7.39	pg/g	7.39
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.85	pg/g	1.85
52663-58-8	64-TeCB	U	1.85	pg/g	1.85

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**PCB Congeners  
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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796001	<b>Date Collected:</b> 09/10/2016 09:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.1
<b>Client ID:</b> VC-A-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 17:59	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.21 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.85	pg/g	1.85
73575-53-8	67-TeCB	U	1.85	pg/g	1.85
73575-52-7	68-TeCB	U	1.85	pg/g	1.85
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.85	pg/g	1.85
74338-23-1	73-TeCB	U	1.85	pg/g	1.85
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.85	pg/g	1.85
70362-49-1	78-TeCB	U	1.85	pg/g	1.85
41464-48-6	79-TeCB	U	1.85	pg/g	1.85
33284-52-5	80-TeCB	U	1.85	pg/g	1.85
70362-50-4	81-TeCB	U	1.85	pg/g	1.85
52663-62-4	82-PeCB	U	1.85	pg/g	1.85
60145-20-2	83-PeCB	U	1.85	pg/g	1.85
52663-60-2	84-PeCB	U	1.85	pg/g	1.85
65510-45-4	85-PeCB	CU	5.54	pg/g	5.54
55312-69-1	86-PeCB	CU	11.1	pg/g	11.1
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.7	pg/g	3.70
73575-57-2	89-PeCB	U	1.85	pg/g	1.85
68194-07-0	90-PeCB	CU	5.54	pg/g	5.54
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.85	pg/g	1.85
73575-56-1	93-PeCB	CU	3.7	pg/g	3.70
73575-55-0	94-PeCB	U	1.85	pg/g	1.85
38379-99-6	95-PeCB	U	1.85	pg/g	1.85
73575-54-9	96-PeCB	U	1.85	pg/g	1.85

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<b>Lab Sample ID:</b> 9796001	<b>Date Collected:</b> 09/10/2016 09:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.1
<b>Client ID:</b> VC-A-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 17:59	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.21 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.7	pg/g	3.70
38380-01-7	99-PeCB	U	1.85	pg/g	1.85
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.85	pg/g	1.85
56558-16-8	104-PeCB	U	1.85	pg/g	1.85
32598-14-4	105-PeCB	U	1.85	pg/g	1.85
70424-69-0	106-PeCB	U	1.85	pg/g	1.85
70424-68-9	107-PeCB	U	1.85	pg/g	1.85
70362-41-3	108-PeCB	CU	3.7	pg/g	3.70
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.7	pg/g	3.70
39635-32-0	111-PeCB	U	1.85	pg/g	1.85
74472-36-9	112-PeCB	U	1.85	pg/g	1.85
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.85	pg/g	1.85
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.85	pg/g	1.85
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.85	pg/g	1.85
56558-18-0	121-PeCB	U	1.85	pg/g	1.85
76842-07-4	122-PeCB	U	1.85	pg/g	1.85
65510-44-3	123-PeCB	U	1.85	pg/g	1.85
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.85	pg/g	1.85
39635-33-1	127-PeCB	U	1.85	pg/g	1.85
38380-07-3	128-HxCB	CU	3.7	pg/g	3.70

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**PCB Congeners**  
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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796001	<b>Date Collected:</b> 09/10/2016 09:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.1
<b>Client ID:</b> VC-A-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 17:59	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.21 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.54	pg/g	5.54
52663-66-8	130-HxCB	U	1.85	pg/g	1.85
61798-70-7	131-HxCB	U	1.85	pg/g	1.85
38380-05-1	132-HxCB	U	1.85	pg/g	1.85
35694-04-3	133-HxCB	U	1.85	pg/g	1.85
52704-70-8	134-HxCB	U	1.85	pg/g	1.85
52744-13-5	135-HxCB	CU	3.7	pg/g	3.70
38411-22-2	136-HxCB	U	1.85	pg/g	1.85
35694-06-5	137-HxCB	U	1.85	pg/g	1.85
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.7	pg/g	3.70
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.85	pg/g	1.85
41411-61-4	142-HxCB	U	1.85	pg/g	1.85
68194-15-0	143-HxCB	U	1.85	pg/g	1.85
68194-14-9	144-HxCB	U	1.85	pg/g	1.85
74472-40-5	145-HxCB	U	1.85	pg/g	1.85
51908-16-8	146-HxCB	U	1.85	pg/g	1.85
68194-13-8	147-HxCB	CU	3.7	pg/g	3.70
74472-41-6	148-HxCB	U	1.85	pg/g	1.85
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.85	pg/g	1.85
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.85	pg/g	1.85
35065-27-1	153-HxCB	CU	3.7	pg/g	3.70
60145-22-4	154-HxCB	U	1.85	pg/g	1.85
33979-03-2	155-HxCB	U	1.85	pg/g	1.85
38380-08-4	156-HxCB	CU	3.7	pg/g	3.70
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.85	pg/g	1.85
39635-35-3	159-HxCB	U	1.85	pg/g	1.85
41411-62-5	160-HxCB	U	1.85	pg/g	1.85

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796001  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-01  
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**Prep Date:** 05-OCT-16

**Client:** ALPH001  
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**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 13.21 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 18.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.85	pg/g	1.85
39635-34-2	162-HxCB	U	1.85	pg/g	1.85
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.85	pg/g	1.85
74472-46-1	165-HxCB	U	1.85	pg/g	1.85
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.85	pg/g	1.85
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.85	pg/g	1.85
35065-30-6	170-HpCB	U	1.85	pg/g	1.85
52663-71-5	171-HpCB	CU	3.7	pg/g	3.70
52663-74-8	172-HpCB	U	1.85	pg/g	1.85
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.85	pg/g	1.85
40186-70-7	175-HpCB	U	1.85	pg/g	1.85
52663-65-7	176-HpCB	U	1.85	pg/g	1.85
52663-70-4	177-HpCB	U	1.85	pg/g	1.85
52663-67-9	178-HpCB	U	1.85	pg/g	1.85
52663-64-6	179-HpCB	U	1.85	pg/g	1.85
35065-29-3	180-HpCB	CU	3.7	pg/g	3.70
74472-47-2	181-HpCB	U	1.85	pg/g	1.85
60145-23-5	182-HpCB	U	1.85	pg/g	1.85
52663-69-1	183-HpCB	CU	3.7	pg/g	3.70
74472-48-3	184-HpCB	U	1.85	pg/g	1.85
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.85	pg/g	1.85
52663-68-0	187-HpCB	U	1.85	pg/g	1.85
74487-85-7	188-HpCB	U	1.85	pg/g	1.85
39635-31-9	189-HpCB	U	1.85	pg/g	1.85
41411-64-7	190-HpCB	U	1.85	pg/g	1.85
74472-50-7	191-HpCB	U	1.85	pg/g	1.85
74472-51-8	192-HpCB	U	1.85	pg/g	1.85

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**Prep Aliquot:** 13.21 g

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**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.85	pg/g	1.85
52663-78-2	195-OcCB	U	1.85	pg/g	1.85
42740-50-1	196-OcCB	U	1.85	pg/g	1.85
33091-17-7	197-OcCB	CU	3.7	pg/g	3.70
68194-17-2	198-OcCB	CU	3.7	pg/g	3.70
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.85	pg/g	1.85
2136-99-4	202-OcCB	U	1.85	pg/g	1.85
52663-76-0	203-OcCB	U	1.85	pg/g	1.85
74472-52-9	204-OcCB	U	1.85	pg/g	1.85
74472-53-0	205-OcCB	U	1.85	pg/g	1.85
40186-72-9	206-NoCB	U	1.85	pg/g	1.85
52663-79-3	207-NoCB	U	1.85	pg/g	1.85
52663-77-1	208-NoCB	U	1.85	pg/g	1.85
2051-24-3	209-DeCB	U	1.85	pg/g	1.85
1336-36-3	Total PCB Congeners	B	5.17	pg/g	1.85

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		55.7	185	pg/g	30.1	(15%-150%)
13C-3-MoCB		71.9	185	pg/g	38.9	(15%-150%)
13C-4-DiCB	Q	39.5	185	pg/g	21.4 *	(25%-150%)
13C-15-DiCB		164	185	pg/g	88.9	(25%-150%)
13C-19-TrCB		90.1	185	pg/g	48.8	(25%-150%)
13C-37-TrCB		159	185	pg/g	86.0	(25%-150%)
13C-54-TeCB		63.3	185	pg/g	34.3	(25%-150%)
13C-77-TeCB		200	185	pg/g	108	(25%-150%)
13C-81-TeCB		202	185	pg/g	110	(25%-150%)
13C-104-PeCB		72.6	185	pg/g	39.3	(25%-150%)
13C-105-PeCB		156	185	pg/g	84.5	(25%-150%)
13C-114-PeCB		153	185	pg/g	82.8	(25%-150%)
13C-118-PeCB		156	185	pg/g	84.6	(25%-150%)
13C-123-PeCB		158	185	pg/g	85.3	(25%-150%)
13C-126-PeCB		154	185	pg/g	83.3	(25%-150%)
13C-155-HxCB		87.1	185	pg/g	47.1	(25%-150%)
13C-156-HxCB	C	260	370	pg/g	70.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		138	185	pg/g	74.5	(25%-150%)
13C-169-HxCB		127	185	pg/g	68.6	(25%-150%)
13C-188-HpCB		124	185	pg/g	67.0	(25%-150%)
13C-189-HpCB		139	185	pg/g	75.4	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796001	<b>Date Collected:</b> 09/10/2016 09:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.1
<b>Client ID:</b> VC-A-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 17:59	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.21 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			131	185	pg/g	70.9 (25%-150%)
13C-205-OcCB			140	185	pg/g	75.6 (25%-150%)
13C-206-NoCB			103	185	pg/g	55.8 (25%-150%)
13C-208-NoCB			130	185	pg/g	70.5 (25%-150%)
13C-209-DeCB			117	185	pg/g	63.1 (25%-150%)
13C-111-PeCB			148	185	pg/g	80.1 (30%-135%)
13C-28-TrCB			107	185	pg/g	58.2 (30%-135%)
13C-178-HpCB			135	185	pg/g	72.9 (30%-135%)

**Comments:**

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- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- Q** Quantitative Interference; value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796002	<b>Date Collected:</b> 09/10/2016 08:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.3
<b>Client ID:</b> VC-A-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 19:05	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.82	pg/g	1.82
2051-61-8	2-MoCB	U	1.82	pg/g	1.82
2051-62-9	3-MoCB	U	1.82	pg/g	1.82
13029-08-8	4-DiCB	QU	1.82	pg/g	1.82
16605-91-7	5-DiCB	U	1.82	pg/g	1.82
25569-80-6	6-DiCB	U	1.82	pg/g	1.82
33284-50-3	7-DiCB	U	1.82	pg/g	1.82
34883-43-7	8-DiCB	U	1.82	pg/g	1.82
34883-39-1	9-DiCB	U	1.82	pg/g	1.82
33146-45-1	10-DiCB	U	1.82	pg/g	1.82
2050-67-1	11-DiCB	B	7.38	pg/g	3.64
2974-92-7	12-DiCB	CU	3.64	pg/g	3.64
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.82	pg/g	1.82
2050-68-2	15-DiCB	U	1.82	pg/g	1.82
38444-78-9	16-TrCB	U	1.82	pg/g	1.82
37680-66-3	17-TrCB	U	1.82	pg/g	1.82
37680-65-2	18-TrCB	CU	3.64	pg/g	3.64
38444-73-4	19-TrCB	U	1.82	pg/g	1.82
38444-84-7	20-TrCB	CU	3.64	pg/g	3.64
55702-46-0	21-TrCB	CU	3.64	pg/g	3.64
38444-85-8	22-TrCB	U	1.82	pg/g	1.82
55720-44-0	23-TrCB	U	1.82	pg/g	1.82
55702-45-9	24-TrCB	U	1.82	pg/g	1.82
55712-37-3	25-TrCB	U	1.82	pg/g	1.82
38444-81-4	26-TrCB	CU	3.64	pg/g	3.64
38444-76-7	27-TrCB	U	1.82	pg/g	1.82
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.82	pg/g	1.82
38444-77-8	32-TrCB	U	1.82	pg/g	1.82

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796002	<b>Date Collected:</b> 09/10/2016 08:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.3
<b>Client ID:</b> VC-A-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 19:05	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-6		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.82	pg/g	1.82
37680-69-6	35-TrCB	U	1.82	pg/g	1.82
38444-87-0	36-TrCB	U	1.82	pg/g	1.82
38444-90-5	37-TrCB	U	1.82	pg/g	1.82
53555-66-1	38-TrCB	U	1.82	pg/g	1.82
38444-88-1	39-TrCB	U	1.82	pg/g	1.82
38444-93-8	40-TeCB	CU	3.64	pg/g	3.64
52663-59-9	41-TeCB	U	1.82	pg/g	1.82
36559-22-5	42-TeCB	U	1.82	pg/g	1.82
70362-46-8	43-TeCB	U	1.82	pg/g	1.82
41464-39-5	44-TeCB	CU	5.46	pg/g	5.46
70362-45-7	45-TeCB	CU	3.64	pg/g	3.64
41464-47-5	46-TeCB	U	1.82	pg/g	1.82
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.82	pg/g	1.82
41464-40-8	49-TeCB	CU	3.64	pg/g	3.64
62796-65-0	50-TeCB	CU	3.64	pg/g	3.64
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.82	pg/g	1.82
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.82	pg/g	1.82
74338-24-2	55-TeCB	U	1.82	pg/g	1.82
41464-43-1	56-TeCB	U	1.82	pg/g	1.82
70424-67-8	57-TeCB	U	1.82	pg/g	1.82
41464-49-7	58-TeCB	U	1.82	pg/g	1.82
74472-33-6	59-TeCB	CU	5.46	pg/g	5.46
33025-41-1	60-TeCB	U	1.82	pg/g	1.82
33284-53-6	61-TeCB	CU	7.28	pg/g	7.28
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.82	pg/g	1.82
52663-58-8	64-TeCB	U	1.82	pg/g	1.82

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796002	<b>Date Collected:</b> 09/10/2016 08:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.3
<b>Client ID:</b> VC-A-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 19:05	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-6		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.82	pg/g	1.82
73575-53-8	67-TeCB	U	1.82	pg/g	1.82
73575-52-7	68-TeCB	U	1.82	pg/g	1.82
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.82	pg/g	1.82
74338-23-1	73-TeCB	U	1.82	pg/g	1.82
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.82	pg/g	1.82
70362-49-1	78-TeCB	U	1.82	pg/g	1.82
41464-48-6	79-TeCB	U	1.82	pg/g	1.82
33284-52-5	80-TeCB	U	1.82	pg/g	1.82
70362-50-4	81-TeCB	U	1.82	pg/g	1.82
52663-62-4	82-PeCB	U	1.82	pg/g	1.82
60145-20-2	83-PeCB	U	1.82	pg/g	1.82
52663-60-2	84-PeCB	U	1.82	pg/g	1.82
65510-45-4	85-PeCB	CU	5.46	pg/g	5.46
55312-69-1	86-PeCB	CU	10.9	pg/g	10.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.64	pg/g	3.64
73575-57-2	89-PeCB	U	1.82	pg/g	1.82
68194-07-0	90-PeCB	CU	5.46	pg/g	5.46
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.82	pg/g	1.82
73575-56-1	93-PeCB	CU	3.64	pg/g	3.64
73575-55-0	94-PeCB	U	1.82	pg/g	1.82
38379-99-6	95-PeCB	U	1.82	pg/g	1.82
73575-54-9	96-PeCB	U	1.82	pg/g	1.82

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

**SDG Number:** L1629122  
**Lab Sample ID:** 9796002  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-02  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 19:05  
**Data File:** c13oct16a-6  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/10/2016 08:30  
**Date Received:** 09/21/2016 09:50  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 13.45 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 18.3  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.64	pg/g	3.64
38380-01-7	99-PeCB	U	1.82	pg/g	1.82
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.82	pg/g	1.82
56558-16-8	104-PeCB	U	1.82	pg/g	1.82
32598-14-4	105-PeCB	U	1.82	pg/g	1.82
70424-69-0	106-PeCB	U	1.82	pg/g	1.82
70424-68-9	107-PeCB	U	1.82	pg/g	1.82
70362-41-3	108-PeCB	CU	3.64	pg/g	3.64
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.64	pg/g	3.64
39635-32-0	111-PeCB	U	1.82	pg/g	1.82
74472-36-9	112-PeCB	U	1.82	pg/g	1.82
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.82	pg/g	1.82
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.82	pg/g	1.82
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.82	pg/g	1.82
56558-18-0	121-PeCB	U	1.82	pg/g	1.82
76842-07-4	122-PeCB	U	1.82	pg/g	1.82
65510-44-3	123-PeCB	U	1.82	pg/g	1.82
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.82	pg/g	1.82
39635-33-1	127-PeCB	U	1.82	pg/g	1.82
38380-07-3	128-HxCB	CU	3.64	pg/g	3.64

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796002	<b>Date Collected:</b> 09/10/2016 08:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.3
<b>Client ID:</b> VC-A-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 19:05	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-6		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.46	pg/g	5.46
52663-66-8	130-HxCB	U	1.82	pg/g	1.82
61798-70-7	131-HxCB	U	1.82	pg/g	1.82
38380-05-1	132-HxCB	U	1.82	pg/g	1.82
35694-04-3	133-HxCB	U	1.82	pg/g	1.82
52704-70-8	134-HxCB	U	1.82	pg/g	1.82
52744-13-5	135-HxCB	CU	3.64	pg/g	3.64
38411-22-2	136-HxCB	U	1.82	pg/g	1.82
35694-06-5	137-HxCB	U	1.82	pg/g	1.82
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.64	pg/g	3.64
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.82	pg/g	1.82
41411-61-4	142-HxCB	U	1.82	pg/g	1.82
68194-15-0	143-HxCB	U	1.82	pg/g	1.82
68194-14-9	144-HxCB	U	1.82	pg/g	1.82
74472-40-5	145-HxCB	U	1.82	pg/g	1.82
51908-16-8	146-HxCB	U	1.82	pg/g	1.82
68194-13-8	147-HxCB	CU	3.64	pg/g	3.64
74472-41-6	148-HxCB	U	1.82	pg/g	1.82
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.82	pg/g	1.82
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.82	pg/g	1.82
35065-27-1	153-HxCB	CU	3.64	pg/g	3.64
60145-22-4	154-HxCB	U	1.82	pg/g	1.82
33979-03-2	155-HxCB	U	1.82	pg/g	1.82
38380-08-4	156-HxCB	CU	3.64	pg/g	3.64
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.82	pg/g	1.82
39635-35-3	159-HxCB	U	1.82	pg/g	1.82
41411-62-5	160-HxCB	U	1.82	pg/g	1.82

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796002	<b>Date Collected:</b> 09/10/2016 08:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.3
<b>Client ID:</b> VC-A-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 19:05	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.82	pg/g	1.82
39635-34-2	162-HxCB	U	1.82	pg/g	1.82
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.82	pg/g	1.82
74472-46-1	165-HxCB	U	1.82	pg/g	1.82
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.82	pg/g	1.82
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.82	pg/g	1.82
35065-30-6	170-HpCB	U	1.82	pg/g	1.82
52663-71-5	171-HpCB	CU	3.64	pg/g	3.64
52663-74-8	172-HpCB	U	1.82	pg/g	1.82
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.82	pg/g	1.82
40186-70-7	175-HpCB	U	1.82	pg/g	1.82
52663-65-7	176-HpCB	U	1.82	pg/g	1.82
52663-70-4	177-HpCB	U	1.82	pg/g	1.82
52663-67-9	178-HpCB	U	1.82	pg/g	1.82
52663-64-6	179-HpCB	U	1.82	pg/g	1.82
35065-29-3	180-HpCB	CU	3.64	pg/g	3.64
74472-47-2	181-HpCB	U	1.82	pg/g	1.82
60145-23-5	182-HpCB	U	1.82	pg/g	1.82
52663-69-1	183-HpCB	CU	3.64	pg/g	3.64
74472-48-3	184-HpCB	U	1.82	pg/g	1.82
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.82	pg/g	1.82
52663-68-0	187-HpCB	U	1.82	pg/g	1.82
74487-85-7	188-HpCB	U	1.82	pg/g	1.82
39635-31-9	189-HpCB	U	1.82	pg/g	1.82
41411-64-7	190-HpCB	U	1.82	pg/g	1.82
74472-50-7	191-HpCB	U	1.82	pg/g	1.82
74472-51-8	192-HpCB	U	1.82	pg/g	1.82

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**Q** Quantitative Interference; value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

**SDG Number:** L1629122  
**Lab Sample ID:** 9796002  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-02  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 19:05  
**Data File:** c13oct16a-6  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/10/2016 08:30  
**Date Received:** 09/21/2016 09:50  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 13.45 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 18.3  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.82	pg/g	1.82
52663-78-2	195-OcCB	U	1.82	pg/g	1.82
42740-50-1	196-OcCB	U	1.82	pg/g	1.82
33091-17-7	197-OcCB	CU	3.64	pg/g	3.64
68194-17-2	198-OcCB	CU	3.64	pg/g	3.64
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.82	pg/g	1.82
2136-99-4	202-OcCB	U	1.82	pg/g	1.82
52663-76-0	203-OcCB	U	1.82	pg/g	1.82
74472-52-9	204-OcCB	U	1.82	pg/g	1.82
74472-53-0	205-OcCB	U	1.82	pg/g	1.82
40186-72-9	206-NoCB		2.76	pg/g	1.82
52663-79-3	207-NoCB	U	1.82	pg/g	1.82
52663-77-1	208-NoCB	U	1.82	pg/g	1.82
2051-24-3	209-DeCB		4.53	pg/g	1.82
1336-36-3	Total PCB Congeners	B	14.7	pg/g	1.82

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		48.7	182	pg/g	26.7	(15%-150%)
13C-3-MoCB		60.4	182	pg/g	33.2	(15%-150%)
13C-4-DiCB	Q	35.1	182	pg/g	19.3 *	(25%-150%)
13C-15-DiCB		188	182	pg/g	103	(25%-150%)
13C-19-TrCB		87.7	182	pg/g	48.2	(25%-150%)
13C-37-TrCB		167	182	pg/g	91.7	(25%-150%)
13C-54-TeCB		55.6	182	pg/g	30.6	(25%-150%)
13C-77-TeCB		235	182	pg/g	129	(25%-150%)
13C-81-TeCB		236	182	pg/g	129	(25%-150%)
13C-104-PeCB		64.8	182	pg/g	35.6	(25%-150%)
13C-105-PeCB		164	182	pg/g	89.9	(25%-150%)
13C-114-PeCB		161	182	pg/g	88.3	(25%-150%)
13C-118-PeCB		164	182	pg/g	90.2	(25%-150%)
13C-123-PeCB		167	182	pg/g	91.5	(25%-150%)
13C-126-PeCB		166	182	pg/g	91.2	(25%-150%)
13C-155-HxCB		81.5	182	pg/g	44.8	(25%-150%)
13C-156-HxCB	C	267	364	pg/g	73.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		140	182	pg/g	77.2	(25%-150%)
13C-169-HxCB		134	182	pg/g	73.3	(25%-150%)
13C-188-HpCB		114	182	pg/g	62.5	(25%-150%)
13C-189-HpCB		142	182	pg/g	77.9	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796002	<b>Date Collected:</b> 09/10/2016 08:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 18.3
<b>Client ID:</b> VC-A-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 19:05	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.45 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			123	182	pg/g	67.5 (25%-150%)
13C-205-OcCB			140	182	pg/g	76.8 (25%-150%)
13C-206-NoCB			111	182	pg/g	61.0 (25%-150%)
13C-208-NoCB			125	182	pg/g	68.9 (25%-150%)
13C-209-DeCB			102	182	pg/g	55.8 (25%-150%)
13C-111-PeCB			151	182	pg/g	83.1 (30%-135%)
13C-28-TrCB			99.6	182	pg/g	54.7 (30%-135%)
13C-178-HpCB			129	182	pg/g	71.1 (30%-135%)

**Comments:**

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
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- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 8

**SDG Number:** L1629122  
**Lab Sample ID:** 9796003  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-03  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 20:12  
**Data File:** c13oct16a-7  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/07/2016 19:30  
**Date Received:** 09/21/2016 09:50  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.85 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 12.8  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.79	pg/g	1.79
2051-61-8	2-MoCB	U	1.79	pg/g	1.79
2051-62-9	3-MoCB	U	1.79	pg/g	1.79
13029-08-8	4-DiCB	QU	1.79	pg/g	1.79
16605-91-7	5-DiCB	U	1.79	pg/g	1.79
25569-80-6	6-DiCB	U	1.79	pg/g	1.79
33284-50-3	7-DiCB	U	1.79	pg/g	1.79
34883-43-7	8-DiCB	U	1.79	pg/g	1.79
34883-39-1	9-DiCB	U	1.79	pg/g	1.79
33146-45-1	10-DiCB	U	1.79	pg/g	1.79
2050-67-1	11-DiCB	B	6.00	pg/g	3.57
2974-92-7	12-DiCB	CU	3.57	pg/g	3.57
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.79	pg/g	1.79
2050-68-2	15-DiCB	U	1.79	pg/g	1.79
38444-78-9	16-TrCB	U	1.79	pg/g	1.79
37680-66-3	17-TrCB	U	1.79	pg/g	1.79
37680-65-2	18-TrCB	CU	3.57	pg/g	3.57
38444-73-4	19-TrCB	U	1.79	pg/g	1.79
38444-84-7	20-TrCB	CU	3.57	pg/g	3.57
55702-46-0	21-TrCB	CU	3.57	pg/g	3.57
38444-85-8	22-TrCB	U	1.79	pg/g	1.79
55720-44-0	23-TrCB	U	1.79	pg/g	1.79
55702-45-9	24-TrCB	U	1.79	pg/g	1.79
55712-37-3	25-TrCB	U	1.79	pg/g	1.79
38444-81-4	26-TrCB	CU	3.57	pg/g	3.57
38444-76-7	27-TrCB	U	1.79	pg/g	1.79
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.79	pg/g	1.79
38444-77-8	32-TrCB	U	1.79	pg/g	1.79

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 2 of 8

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796003	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-03		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 20:12	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-7		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.85 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.79	pg/g	1.79
37680-69-6	35-TrCB	U	1.79	pg/g	1.79
38444-87-0	36-TrCB	U	1.79	pg/g	1.79
38444-90-5	37-TrCB	U	1.79	pg/g	1.79
53555-66-1	38-TrCB	U	1.79	pg/g	1.79
38444-88-1	39-TrCB	U	1.79	pg/g	1.79
38444-93-8	40-TeCB	CU	3.57	pg/g	3.57
52663-59-9	41-TeCB	U	1.79	pg/g	1.79
36559-22-5	42-TeCB	U	1.79	pg/g	1.79
70362-46-8	43-TeCB	U	1.79	pg/g	1.79
41464-39-5	44-TeCB	CU	5.36	pg/g	5.36
70362-45-7	45-TeCB	CU	3.57	pg/g	3.57
41464-47-5	46-TeCB	U	1.79	pg/g	1.79
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.79	pg/g	1.79
41464-40-8	49-TeCB	CU	3.57	pg/g	3.57
62796-65-0	50-TeCB	CU	3.57	pg/g	3.57
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.79	pg/g	1.79
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.79	pg/g	1.79
74338-24-2	55-TeCB	U	1.79	pg/g	1.79
41464-43-1	56-TeCB	U	1.79	pg/g	1.79
70424-67-8	57-TeCB	U	1.79	pg/g	1.79
41464-49-7	58-TeCB	U	1.79	pg/g	1.79
74472-33-6	59-TeCB	CU	5.36	pg/g	5.36
33025-41-1	60-TeCB	U	1.79	pg/g	1.79
33284-53-6	61-TeCB	CU	7.14	pg/g	7.14
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.79	pg/g	1.79
52663-58-8	64-TeCB	U	1.79	pg/g	1.79

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**Q** Quantitative Interference; value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.



**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 3 of 8

**SDG Number:** L1629122  
**Lab Sample ID:** 9796003  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-03  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 20:12  
**Data File:** c13oct16a-7  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/07/2016 19:30  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.85 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 12.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.79	pg/g	1.79
73575-53-8	67-TeCB	U	1.79	pg/g	1.79
73575-52-7	68-TeCB	U	1.79	pg/g	1.79
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.79	pg/g	1.79
74338-23-1	73-TeCB	U	1.79	pg/g	1.79
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.79	pg/g	1.79
70362-49-1	78-TeCB	U	1.79	pg/g	1.79
41464-48-6	79-TeCB	U	1.79	pg/g	1.79
33284-52-5	80-TeCB	U	1.79	pg/g	1.79
70362-50-4	81-TeCB	U	1.79	pg/g	1.79
52663-62-4	82-PeCB	U	1.79	pg/g	1.79
60145-20-2	83-PeCB	U	1.79	pg/g	1.79
52663-60-2	84-PeCB	U	1.79	pg/g	1.79
65510-45-4	85-PeCB	CU	5.36	pg/g	5.36
55312-69-1	86-PeCB	CU	10.7	pg/g	10.7
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.57	pg/g	3.57
73575-57-2	89-PeCB	U	1.79	pg/g	1.79
68194-07-0	90-PeCB	CU	5.36	pg/g	5.36
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.79	pg/g	1.79
73575-56-1	93-PeCB	CU	3.57	pg/g	3.57
73575-55-0	94-PeCB	U	1.79	pg/g	1.79
38379-99-6	95-PeCB	U	1.79	pg/g	1.79
73575-54-9	96-PeCB	U	1.79	pg/g	1.79

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796003  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-03  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 20:12  
**Data File:** c13oct16a-7  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/07/2016 19:30  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.85 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 12.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.57	pg/g	3.57
38380-01-7	99-PeCB	U	1.79	pg/g	1.79
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.79	pg/g	1.79
56558-16-8	104-PeCB	U	1.79	pg/g	1.79
32598-14-4	105-PeCB	U	1.79	pg/g	1.79
70424-69-0	106-PeCB	U	1.79	pg/g	1.79
70424-68-9	107-PeCB	U	1.79	pg/g	1.79
70362-41-3	108-PeCB	CU	3.57	pg/g	3.57
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.57	pg/g	3.57
39635-32-0	111-PeCB	U	1.79	pg/g	1.79
74472-36-9	112-PeCB	U	1.79	pg/g	1.79
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.79	pg/g	1.79
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.79	pg/g	1.79
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.79	pg/g	1.79
56558-18-0	121-PeCB	U	1.79	pg/g	1.79
76842-07-4	122-PeCB	U	1.79	pg/g	1.79
65510-44-3	123-PeCB	U	1.79	pg/g	1.79
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.79	pg/g	1.79
39635-33-1	127-PeCB	U	1.79	pg/g	1.79
38380-07-3	128-HxCB	CU	3.57	pg/g	3.57

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**Q** Quantitative Interference; value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 5 of 8

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796003	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-03		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 20:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.85 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.36	pg/g	5.36
52663-66-8	130-HxCB	U	1.79	pg/g	1.79
61798-70-7	131-HxCB	U	1.79	pg/g	1.79
38380-05-1	132-HxCB	U	1.79	pg/g	1.79
35694-04-3	133-HxCB	U	1.79	pg/g	1.79
52704-70-8	134-HxCB	U	1.79	pg/g	1.79
52744-13-5	135-HxCB	CU	3.57	pg/g	3.57
38411-22-2	136-HxCB	U	1.79	pg/g	1.79
35694-06-5	137-HxCB	U	1.79	pg/g	1.79
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.57	pg/g	3.57
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.79	pg/g	1.79
41411-61-4	142-HxCB	U	1.79	pg/g	1.79
68194-15-0	143-HxCB	U	1.79	pg/g	1.79
68194-14-9	144-HxCB	U	1.79	pg/g	1.79
74472-40-5	145-HxCB	U	1.79	pg/g	1.79
51908-16-8	146-HxCB	U	1.79	pg/g	1.79
68194-13-8	147-HxCB	CU	3.57	pg/g	3.57
74472-41-6	148-HxCB	U	1.79	pg/g	1.79
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.79	pg/g	1.79
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.79	pg/g	1.79
35065-27-1	153-HxCB	CU	3.57	pg/g	3.57
60145-22-4	154-HxCB	U	1.79	pg/g	1.79
33979-03-2	155-HxCB	U	1.79	pg/g	1.79
38380-08-4	156-HxCB	CU	3.57	pg/g	3.57
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.79	pg/g	1.79
39635-35-3	159-HxCB	U	1.79	pg/g	1.79
41411-62-5	160-HxCB	U	1.79	pg/g	1.79

**Comments:**

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- Q** Quantitative Interference; value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796003  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-03  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 20:12  
**Data File:** c13oct16a-7  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/07/2016 19:30  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.85 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 12.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.79	pg/g	1.79
39635-34-2	162-HxCB	U	1.79	pg/g	1.79
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.79	pg/g	1.79
74472-46-1	165-HxCB	U	1.79	pg/g	1.79
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.79	pg/g	1.79
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.79	pg/g	1.79
35065-30-6	170-HpCB	U	1.79	pg/g	1.79
52663-71-5	171-HpCB	CU	3.57	pg/g	3.57
52663-74-8	172-HpCB	U	1.79	pg/g	1.79
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.79	pg/g	1.79
40186-70-7	175-HpCB	U	1.79	pg/g	1.79
52663-65-7	176-HpCB	U	1.79	pg/g	1.79
52663-70-4	177-HpCB	U	1.79	pg/g	1.79
52663-67-9	178-HpCB	U	1.79	pg/g	1.79
52663-64-6	179-HpCB	U	1.79	pg/g	1.79
35065-29-3	180-HpCB	CU	3.57	pg/g	3.57
74472-47-2	181-HpCB	U	1.79	pg/g	1.79
60145-23-5	182-HpCB	U	1.79	pg/g	1.79
52663-69-1	183-HpCB	CU	3.57	pg/g	3.57
74472-48-3	184-HpCB	U	1.79	pg/g	1.79
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.79	pg/g	1.79
52663-68-0	187-HpCB		1.86	pg/g	1.79
74487-85-7	188-HpCB	U	1.79	pg/g	1.79
39635-31-9	189-HpCB	U	1.79	pg/g	1.79
41411-64-7	190-HpCB	U	1.79	pg/g	1.79
74472-50-7	191-HpCB	U	1.79	pg/g	1.79
74472-51-8	192-HpCB	U	1.79	pg/g	1.79

**Comments:**

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**Q** Quantitative Interference; value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796003	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-03		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 20:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.85 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.79	pg/g	1.79
52663-78-2	195-OcCB	U	1.79	pg/g	1.79
42740-50-1	196-OcCB	U	1.79	pg/g	1.79
33091-17-7	197-OcCB	CU	3.57	pg/g	3.57
68194-17-2	198-OcCB	CU	3.57	pg/g	3.57
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.79	pg/g	1.79
2136-99-4	202-OcCB	U	1.79	pg/g	1.79
52663-76-0	203-OcCB	U	1.79	pg/g	1.79
74472-52-9	204-OcCB	U	1.79	pg/g	1.79
74472-53-0	205-OcCB	U	1.79	pg/g	1.79
40186-72-9	206-NoCB		3.90	pg/g	1.79
52663-79-3	207-NoCB	U	1.79	pg/g	1.79
52663-77-1	208-NoCB		2.38	pg/g	1.79
2051-24-3	209-DeCB		6.24	pg/g	1.79
1336-36-3	Total PCB Congeners	B	20.4	pg/g	1.79

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		50.6	179	pg/g	28.3	(15%-150%)
13C-3-MoCB		67.2	179	pg/g	37.6	(15%-150%)
13C-4-DiCB	Q	34.7	179	pg/g	19.4 *	(25%-150%)
13C-15-DiCB		166	179	pg/g	92.8	(25%-150%)
13C-19-TrCB		85.2	179	pg/g	47.7	(25%-150%)
13C-37-TrCB		165	179	pg/g	92.4	(25%-150%)
13C-54-TeCB		61.7	179	pg/g	34.5	(25%-150%)
13C-77-TeCB		217	179	pg/g	122	(25%-150%)
13C-81-TeCB		218	179	pg/g	122	(25%-150%)
13C-104-PeCB		69.2	179	pg/g	38.8	(25%-150%)
13C-105-PeCB		164	179	pg/g	92.0	(25%-150%)
13C-114-PeCB		160	179	pg/g	89.8	(25%-150%)
13C-118-PeCB		167	179	pg/g	93.4	(25%-150%)
13C-123-PeCB		166	179	pg/g	93.3	(25%-150%)
13C-126-PeCB		167	179	pg/g	93.6	(25%-150%)
13C-155-HxCB		84.3	179	pg/g	47.2	(25%-150%)
13C-156-HxCB	C	272	357	pg/g	76.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		144	179	pg/g	80.4	(25%-150%)
13C-169-HxCB		138	179	pg/g	77.1	(25%-150%)
13C-188-HpCB		115	179	pg/g	64.7	(25%-150%)
13C-189-HpCB		144	179	pg/g	80.9	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796003	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-03		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 20:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.85 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			125	179	pg/g	70.3 (25%-150%)
13C-205-OcCB			142	179	pg/g	79.6 (25%-150%)
13C-206-NoCB			122	179	pg/g	68.1 (25%-150%)
13C-208-NoCB			127	179	pg/g	71.0 (25%-150%)
13C-209-DeCB			106	179	pg/g	59.6 (25%-150%)
13C-111-PeCB			132	179	pg/g	74.0 (30%-135%)
13C-28-TrCB			96.8	179	pg/g	54.2 (30%-135%)
13C-178-HpCB			115	179	pg/g	64.4 (30%-135%)

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796004  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-03 DUP  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 21:18  
**Data File:** c13oct16a-8  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/07/2016 19:30  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.2 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 13.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.89	pg/g	1.89
2051-61-8	2-MoCB	U	1.89	pg/g	1.89
2051-62-9	3-MoCB	U	1.89	pg/g	1.89
13029-08-8	4-DiCB	QU	1.89	pg/g	1.89
16605-91-7	5-DiCB	U	1.89	pg/g	1.89
25569-80-6	6-DiCB	U	1.89	pg/g	1.89
33284-50-3	7-DiCB	U	1.89	pg/g	1.89
34883-43-7	8-DiCB	U	1.89	pg/g	1.89
34883-39-1	9-DiCB	U	1.89	pg/g	1.89
33146-45-1	10-DiCB	U	1.89	pg/g	1.89
2050-67-1	11-DiCB	B	6.89	pg/g	3.77
2974-92-7	12-DiCB	CU	3.77	pg/g	3.77
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.89	pg/g	1.89
2050-68-2	15-DiCB		1.97	pg/g	1.89
38444-78-9	16-TrCB	U	1.89	pg/g	1.89
37680-66-3	17-TrCB	U	1.89	pg/g	1.89
37680-65-2	18-TrCB	CU	3.77	pg/g	3.77
38444-73-4	19-TrCB	U	1.89	pg/g	1.89
38444-84-7	20-TrCB	CU	3.77	pg/g	3.77
55702-46-0	21-TrCB	CU	3.77	pg/g	3.77
38444-85-8	22-TrCB	U	1.89	pg/g	1.89
55720-44-0	23-TrCB	U	1.89	pg/g	1.89
55702-45-9	24-TrCB	U	1.89	pg/g	1.89
55712-37-3	25-TrCB	U	1.89	pg/g	1.89
38444-81-4	26-TrCB	CU	3.77	pg/g	3.77
38444-76-7	27-TrCB	U	1.89	pg/g	1.89
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.89	pg/g	1.89
38444-77-8	32-TrCB	U	1.89	pg/g	1.89

**Comments:**

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**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796004	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 21:18	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-8		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.89	pg/g	1.89
37680-69-6	35-TrCB	U	1.89	pg/g	1.89
38444-87-0	36-TrCB	U	1.89	pg/g	1.89
38444-90-5	37-TrCB	U	1.89	pg/g	1.89
53555-66-1	38-TrCB	U	1.89	pg/g	1.89
38444-88-1	39-TrCB	U	1.89	pg/g	1.89
38444-93-8	40-TeCB	CU	3.77	pg/g	3.77
52663-59-9	41-TeCB	U	1.89	pg/g	1.89
36559-22-5	42-TeCB	U	1.89	pg/g	1.89
70362-46-8	43-TeCB	U	1.89	pg/g	1.89
41464-39-5	44-TeCB	CU	5.66	pg/g	5.66
70362-45-7	45-TeCB	CU	3.77	pg/g	3.77
41464-47-5	46-TeCB	U	1.89	pg/g	1.89
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.89	pg/g	1.89
41464-40-8	49-TeCB	CU	3.77	pg/g	3.77
62796-65-0	50-TeCB	CU	3.77	pg/g	3.77
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.89	pg/g	1.89
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.89	pg/g	1.89
74338-24-2	55-TeCB	U	1.89	pg/g	1.89
41464-43-1	56-TeCB	U	1.89	pg/g	1.89
70424-67-8	57-TeCB	U	1.89	pg/g	1.89
41464-49-7	58-TeCB	U	1.89	pg/g	1.89
74472-33-6	59-TeCB	CU	5.66	pg/g	5.66
33025-41-1	60-TeCB	U	1.89	pg/g	1.89
33284-53-6	61-TeCB	CU	7.55	pg/g	7.55
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.89	pg/g	1.89
52663-58-8	64-TeCB	U	1.89	pg/g	1.89

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**Q** Quantitative Interference; value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.



**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796004	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 21:18	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		2.14	pg/g	1.89
73575-53-8	67-TeCB	U	1.89	pg/g	1.89
73575-52-7	68-TeCB	U	1.89	pg/g	1.89
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.89	pg/g	1.89
74338-23-1	73-TeCB	U	1.89	pg/g	1.89
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.89	pg/g	1.89
70362-49-1	78-TeCB	U	1.89	pg/g	1.89
41464-48-6	79-TeCB	U	1.89	pg/g	1.89
33284-52-5	80-TeCB	U	1.89	pg/g	1.89
70362-50-4	81-TeCB	U	1.89	pg/g	1.89
52663-62-4	82-PeCB	U	1.89	pg/g	1.89
60145-20-2	83-PeCB	U	1.89	pg/g	1.89
52663-60-2	84-PeCB	U	1.89	pg/g	1.89
65510-45-4	85-PeCB	CU	5.66	pg/g	5.66
55312-69-1	86-PeCB	CU	11.3	pg/g	11.3
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.77	pg/g	3.77
73575-57-2	89-PeCB	U	1.89	pg/g	1.89
68194-07-0	90-PeCB	CU	5.66	pg/g	5.66
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.89	pg/g	1.89
73575-56-1	93-PeCB	CU	3.77	pg/g	3.77
73575-55-0	94-PeCB	U	1.89	pg/g	1.89
38379-99-6	95-PeCB	U	1.89	pg/g	1.89
73575-54-9	96-PeCB	U	1.89	pg/g	1.89

**Comments:**

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- Q** Quantitative Interference; value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 4 of 8

**SDG Number:** L1629122  
**Lab Sample ID:** 9796004  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-03 DUP  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 21:18  
**Data File:** c13oct16a-8  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/07/2016 19:30  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.2 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 13.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.77	pg/g	3.77
38380-01-7	99-PeCB		2.00	pg/g	1.89
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.89	pg/g	1.89
56558-16-8	104-PeCB	U	1.89	pg/g	1.89
32598-14-4	105-PeCB	U	1.89	pg/g	1.89
70424-69-0	106-PeCB	U	1.89	pg/g	1.89
70424-68-9	107-PeCB	U	1.89	pg/g	1.89
70362-41-3	108-PeCB	CU	3.77	pg/g	3.77
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.77	pg/g	3.77
39635-32-0	111-PeCB	U	1.89	pg/g	1.89
74472-36-9	112-PeCB	U	1.89	pg/g	1.89
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.89	pg/g	1.89
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		2.15	pg/g	1.89
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.89	pg/g	1.89
56558-18-0	121-PeCB	U	1.89	pg/g	1.89
76842-07-4	122-PeCB	U	1.89	pg/g	1.89
65510-44-3	123-PeCB	U	1.89	pg/g	1.89
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.89	pg/g	1.89
39635-33-1	127-PeCB	U	1.89	pg/g	1.89
38380-07-3	128-HxCB	CU	3.77	pg/g	3.77

**Comments:**

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**Q** Quantitative Interference; value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

**SDG Number:** L1629122  
**Lab Sample ID:** 9796004  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-03 DUP  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 21:18  
**Data File:** c13oct16a-8  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/07/2016 19:30  
**Date Received:** 09/21/2016 09:50  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.2 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 13.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.66	pg/g	5.66
52663-66-8	130-HxCB	U	1.89	pg/g	1.89
61798-70-7	131-HxCB	U	1.89	pg/g	1.89
38380-05-1	132-HxCB	U	1.89	pg/g	1.89
35694-04-3	133-HxCB	U	1.89	pg/g	1.89
52704-70-8	134-HxCB	U	1.89	pg/g	1.89
52744-13-5	135-HxCB	CU	3.77	pg/g	3.77
38411-22-2	136-HxCB	U	1.89	pg/g	1.89
35694-06-5	137-HxCB	U	1.89	pg/g	1.89
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.77	pg/g	3.77
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.89	pg/g	1.89
41411-61-4	142-HxCB	U	1.89	pg/g	1.89
68194-15-0	143-HxCB	U	1.89	pg/g	1.89
68194-14-9	144-HxCB	U	1.89	pg/g	1.89
74472-40-5	145-HxCB	U	1.89	pg/g	1.89
51908-16-8	146-HxCB	U	1.89	pg/g	1.89
68194-13-8	147-HxCB	CU	3.77	pg/g	3.77
74472-41-6	148-HxCB	U	1.89	pg/g	1.89
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.89	pg/g	1.89
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.89	pg/g	1.89
35065-27-1	153-HxCB	CU	3.77	pg/g	3.77
60145-22-4	154-HxCB	U	1.89	pg/g	1.89
33979-03-2	155-HxCB	U	1.89	pg/g	1.89
38380-08-4	156-HxCB	CU	3.77	pg/g	3.77
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.89	pg/g	1.89
39635-35-3	159-HxCB	U	1.89	pg/g	1.89
41411-62-5	160-HxCB	U	1.89	pg/g	1.89

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796004	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 21:18	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.89	pg/g	1.89
39635-34-2	162-HxCB	U	1.89	pg/g	1.89
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.89	pg/g	1.89
74472-46-1	165-HxCB	U	1.89	pg/g	1.89
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.89	pg/g	1.89
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.89	pg/g	1.89
35065-30-6	170-HpCB	U	1.89	pg/g	1.89
52663-71-5	171-HpCB	CU	3.77	pg/g	3.77
52663-74-8	172-HpCB	U	1.89	pg/g	1.89
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.89	pg/g	1.89
40186-70-7	175-HpCB	U	1.89	pg/g	1.89
52663-65-7	176-HpCB	U	1.89	pg/g	1.89
52663-70-4	177-HpCB	U	1.89	pg/g	1.89
52663-67-9	178-HpCB	U	1.89	pg/g	1.89
52663-64-6	179-HpCB	U	1.89	pg/g	1.89
35065-29-3	180-HpCB	CU	3.77	pg/g	3.77
74472-47-2	181-HpCB	U	1.89	pg/g	1.89
60145-23-5	182-HpCB	U	1.89	pg/g	1.89
52663-69-1	183-HpCB	CU	3.77	pg/g	3.77
74472-48-3	184-HpCB	U	1.89	pg/g	1.89
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.89	pg/g	1.89
52663-68-0	187-HpCB	U	1.89	pg/g	1.89
74487-85-7	188-HpCB	U	1.89	pg/g	1.89
39635-31-9	189-HpCB	U	1.89	pg/g	1.89
41411-64-7	190-HpCB	U	1.89	pg/g	1.89
74472-50-7	191-HpCB	U	1.89	pg/g	1.89
74472-51-8	192-HpCB	U	1.89	pg/g	1.89

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796004	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/13/2016 21:18	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a-8		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.89	pg/g	1.89
52663-78-2	195-OcCB	U	1.89	pg/g	1.89
42740-50-1	196-OcCB	U	1.89	pg/g	1.89
33091-17-7	197-OcCB	CU	3.77	pg/g	3.77
68194-17-2	198-OcCB	CU	3.77	pg/g	3.77
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.89	pg/g	1.89
2136-99-4	202-OcCB	U	1.89	pg/g	1.89
52663-76-0	203-OcCB	U	1.89	pg/g	1.89
74472-52-9	204-OcCB	U	1.89	pg/g	1.89
74472-53-0	205-OcCB	U	1.89	pg/g	1.89
40186-72-9	206-NoCB		2.33	pg/g	1.89
52663-79-3	207-NoCB	U	1.89	pg/g	1.89
52663-77-1	208-NoCB	U	1.89	pg/g	1.89
2051-24-3	209-DeCB		4.05	pg/g	1.89
1336-36-3	Total PCB Congeners	B	21.5	pg/g	1.89

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		52.3	189	pg/g	27.7	(15%-150%)
13C-3-MoCB		67.6	189	pg/g	35.8	(15%-150%)
13C-4-DiCB	Q	37.6	189	pg/g	19.9 *	(25%-150%)
13C-15-DiCB		176	189	pg/g	93.4	(25%-150%)
13C-19-TrCB		88.4	189	pg/g	46.9	(25%-150%)
13C-37-TrCB		191	189	pg/g	101	(25%-150%)
13C-54-TeCB		64.7	189	pg/g	34.3	(25%-150%)
13C-77-TeCB		250	189	pg/g	133	(25%-150%)
13C-81-TeCB		250	189	pg/g	132	(25%-150%)
13C-104-PeCB		78.1	189	pg/g	41.4	(25%-150%)
13C-105-PeCB		187	189	pg/g	99.1	(25%-150%)
13C-114-PeCB		183	189	pg/g	97.0	(25%-150%)
13C-118-PeCB		188	189	pg/g	99.8	(25%-150%)
13C-123-PeCB		189	189	pg/g	100	(25%-150%)
13C-126-PeCB		193	189	pg/g	102	(25%-150%)
13C-155-HxCB		95.6	189	pg/g	50.6	(25%-150%)
13C-156-HxCB	C	313	377	pg/g	83.0	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		165	189	pg/g	87.6	(25%-150%)
13C-169-HxCB		161	189	pg/g	85.1	(25%-150%)
13C-188-HpCB		128	189	pg/g	67.9	(25%-150%)
13C-189-HpCB		164	189	pg/g	86.9	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796004	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 21:18	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL		
<b>Surrogate/Tracer recovery</b>							
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>		
				<b>Recovery%</b>	<b>Acceptable Limits</b>		
13C-202-OcCB			139	189	pg/g	73.5	(25%-150%)
13C-205-OcCB			162	189	pg/g	85.8	(25%-150%)
13C-206-NoCB			138	189	pg/g	73.4	(25%-150%)
13C-208-NoCB			142	189	pg/g	75.0	(25%-150%)
13C-209-DeCB			127	189	pg/g	67.4	(25%-150%)
13C-111-PeCB			167	189	pg/g	88.3	(30%-135%)
13C-28-TrCB			116	189	pg/g	61.6	(30%-135%)
13C-178-HpCB			143	189	pg/g	75.8	(30%-135%)

**Comments:**  
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**Q** Quantitative Interference; value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 04:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 15.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.98	pg/g	1.98
2051-61-8	2-MoCB		3.31	pg/g	1.98
2051-62-9	3-MoCB	U	1.98	pg/g	1.98
13029-08-8	4-DiCB	QU	1.98	pg/g	1.98
16605-91-7	5-DiCB	U	1.98	pg/g	1.98
25569-80-6	6-DiCB	U	1.98	pg/g	1.98
33284-50-3	7-DiCB	U	1.98	pg/g	1.98
34883-43-7	8-DiCB	U	1.98	pg/g	1.98
34883-39-1	9-DiCB	U	1.98	pg/g	1.98
33146-45-1	10-DiCB	U	1.98	pg/g	1.98
2050-67-1	11-DiCB	B	11.5	pg/g	3.96
2974-92-7	12-DiCB	CU	3.96	pg/g	3.96
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.98	pg/g	1.98
2050-68-2	15-DiCB		3.81	pg/g	1.98
38444-78-9	16-TrCB	U	1.98	pg/g	1.98
37680-66-3	17-TrCB	U	1.98	pg/g	1.98
37680-65-2	18-TrCB	CU	3.96	pg/g	3.96
38444-73-4	19-TrCB	U	1.98	pg/g	1.98
38444-84-7	20-TrCB	C	5.08	pg/g	3.96
55702-46-0	21-TrCB	CU	3.96	pg/g	3.96
38444-85-8	22-TrCB	U	1.98	pg/g	1.98
55720-44-0	23-TrCB	U	1.98	pg/g	1.98
55702-45-9	24-TrCB	U	1.98	pg/g	1.98
55712-37-3	25-TrCB	U	1.98	pg/g	1.98
38444-81-4	26-TrCB	CU	3.96	pg/g	3.96
38444-76-7	27-TrCB	U	1.98	pg/g	1.98
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		3.09	pg/g	1.98
38444-77-8	32-TrCB	U	1.98	pg/g	1.98

**Comments:**

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**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 04:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 15.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.98	pg/g	1.98
37680-69-6	35-TrCB	U	1.98	pg/g	1.98
38444-87-0	36-TrCB	U	1.98	pg/g	1.98
38444-90-5	37-TrCB		2.30	pg/g	1.98
53555-66-1	38-TrCB	U	1.98	pg/g	1.98
38444-88-1	39-TrCB	U	1.98	pg/g	1.98
38444-93-8	40-TeCB	CU	3.96	pg/g	3.96
52663-59-9	41-TeCB	U	1.98	pg/g	1.98
36559-22-5	42-TeCB	U	1.98	pg/g	1.98
70362-46-8	43-TeCB	U	1.98	pg/g	1.98
41464-39-5	44-TeCB	CU	5.94	pg/g	5.94
70362-45-7	45-TeCB	CU	3.96	pg/g	3.96
41464-47-5	46-TeCB	U	1.98	pg/g	1.98
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.98	pg/g	1.98
41464-40-8	49-TeCB	CU	3.96	pg/g	3.96
62796-65-0	50-TeCB	CU	3.96	pg/g	3.96
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		2.37	pg/g	1.98
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.98	pg/g	1.98
74338-24-2	55-TeCB	U	1.98	pg/g	1.98
41464-43-1	56-TeCB	U	1.98	pg/g	1.98
70424-67-8	57-TeCB	U	1.98	pg/g	1.98
41464-49-7	58-TeCB	U	1.98	pg/g	1.98
74472-33-6	59-TeCB	CU	5.94	pg/g	5.94
33025-41-1	60-TeCB	U	1.98	pg/g	1.98
33284-53-6	61-TeCB	CU	7.92	pg/g	7.92
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.98	pg/g	1.98
52663-58-8	64-TeCB	U	1.98	pg/g	1.98

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 04:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 15.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		3.82	pg/g	1.98
73575-53-8	67-TeCB	U	1.98	pg/g	1.98
73575-52-7	68-TeCB	U	1.98	pg/g	1.98
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.98	pg/g	1.98
74338-23-1	73-TeCB	U	1.98	pg/g	1.98
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.98	pg/g	1.98
70362-49-1	78-TeCB	U	1.98	pg/g	1.98
41464-48-6	79-TeCB	U	1.98	pg/g	1.98
33284-52-5	80-TeCB	U	1.98	pg/g	1.98
70362-50-4	81-TeCB	U	1.98	pg/g	1.98
52663-62-4	82-PeCB	U	1.98	pg/g	1.98
60145-20-2	83-PeCB	U	1.98	pg/g	1.98
52663-60-2	84-PeCB	U	1.98	pg/g	1.98
65510-45-4	85-PeCB	CU	5.94	pg/g	5.94
55312-69-1	86-PeCB	CU	11.9	pg/g	11.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.96	pg/g	3.96
73575-57-2	89-PeCB	U	1.98	pg/g	1.98
68194-07-0	90-PeCB	CU	5.94	pg/g	5.94
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.98	pg/g	1.98
73575-56-1	93-PeCB	CU	3.96	pg/g	3.96
73575-55-0	94-PeCB	U	1.98	pg/g	1.98
38379-99-6	95-PeCB	U	1.98	pg/g	1.98
73575-54-9	96-PeCB	U	1.98	pg/g	1.98

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 04:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 15.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.96	pg/g	3.96
38380-01-7	99-PeCB		2.26	pg/g	1.98
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.98	pg/g	1.98
56558-16-8	104-PeCB	U	1.98	pg/g	1.98
32598-14-4	105-PeCB	U	1.98	pg/g	1.98
70424-69-0	106-PeCB	U	1.98	pg/g	1.98
70424-68-9	107-PeCB	U	1.98	pg/g	1.98
70362-41-3	108-PeCB	CU	3.96	pg/g	3.96
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.96	pg/g	3.96
39635-32-0	111-PeCB	U	1.98	pg/g	1.98
74472-36-9	112-PeCB	U	1.98	pg/g	1.98
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.98	pg/g	1.98
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		3.29	pg/g	1.98
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.98	pg/g	1.98
56558-18-0	121-PeCB	U	1.98	pg/g	1.98
76842-07-4	122-PeCB	U	1.98	pg/g	1.98
65510-44-3	123-PeCB	U	1.98	pg/g	1.98
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.98	pg/g	1.98
39635-33-1	127-PeCB	U	1.98	pg/g	1.98
38380-07-3	128-HxCB	CU	3.96	pg/g	3.96

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 04:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 15.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.94	pg/g	5.94
52663-66-8	130-HxCB	U	1.98	pg/g	1.98
61798-70-7	131-HxCB	U	1.98	pg/g	1.98
38380-05-1	132-HxCB	U	1.98	pg/g	1.98
35694-04-3	133-HxCB	U	1.98	pg/g	1.98
52704-70-8	134-HxCB	U	1.98	pg/g	1.98
52744-13-5	135-HxCB	CU	3.96	pg/g	3.96
38411-22-2	136-HxCB	U	1.98	pg/g	1.98
35694-06-5	137-HxCB	U	1.98	pg/g	1.98
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.96	pg/g	3.96
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.98	pg/g	1.98
41411-61-4	142-HxCB	U	1.98	pg/g	1.98
68194-15-0	143-HxCB	U	1.98	pg/g	1.98
68194-14-9	144-HxCB	U	1.98	pg/g	1.98
74472-40-5	145-HxCB	U	1.98	pg/g	1.98
51908-16-8	146-HxCB	U	1.98	pg/g	1.98
68194-13-8	147-HxCB	CU	3.96	pg/g	3.96
74472-41-6	148-HxCB	U	1.98	pg/g	1.98
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.98	pg/g	1.98
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.98	pg/g	1.98
35065-27-1	153-HxCB	C	5.15	pg/g	3.96
60145-22-4	154-HxCB	U	1.98	pg/g	1.98
33979-03-2	155-HxCB	U	1.98	pg/g	1.98
38380-08-4	156-HxCB	CU	3.96	pg/g	3.96
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.98	pg/g	1.98
39635-35-3	159-HxCB	U	1.98	pg/g	1.98
41411-62-5	160-HxCB	U	1.98	pg/g	1.98

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 04:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 15.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.98	pg/g	1.98
39635-34-2	162-HxCB	U	1.98	pg/g	1.98
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.98	pg/g	1.98
74472-46-1	165-HxCB	U	1.98	pg/g	1.98
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.98	pg/g	1.98
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.98	pg/g	1.98
35065-30-6	170-HpCB	U	1.98	pg/g	1.98
52663-71-5	171-HpCB	CU	3.96	pg/g	3.96
52663-74-8	172-HpCB	U	1.98	pg/g	1.98
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.98	pg/g	1.98
40186-70-7	175-HpCB	U	1.98	pg/g	1.98
52663-65-7	176-HpCB	U	1.98	pg/g	1.98
52663-70-4	177-HpCB	U	1.98	pg/g	1.98
52663-67-9	178-HpCB	U	1.98	pg/g	1.98
52663-64-6	179-HpCB	U	1.98	pg/g	1.98
35065-29-3	180-HpCB	CU	3.96	pg/g	3.96
74472-47-2	181-HpCB	U	1.98	pg/g	1.98
60145-23-5	182-HpCB	U	1.98	pg/g	1.98
52663-69-1	183-HpCB	CU	3.96	pg/g	3.96
74472-48-3	184-HpCB	U	1.98	pg/g	1.98
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.98	pg/g	1.98
52663-68-0	187-HpCB		2.70	pg/g	1.98
74487-85-7	188-HpCB	U	1.98	pg/g	1.98
39635-31-9	189-HpCB	U	1.98	pg/g	1.98
41411-64-7	190-HpCB	U	1.98	pg/g	1.98
74472-50-7	191-HpCB	U	1.98	pg/g	1.98
74472-51-8	192-HpCB	U	1.98	pg/g	1.98

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 04:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 15.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.98	pg/g	1.98
52663-78-2	195-OcCB	U	1.98	pg/g	1.98
42740-50-1	196-OcCB	U	1.98	pg/g	1.98
33091-17-7	197-OcCB	CU	3.96	pg/g	3.96
68194-17-2	198-OcCB	CU	3.96	pg/g	3.96
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.98	pg/g	1.98
2136-99-4	202-OcCB	U	1.98	pg/g	1.98
52663-76-0	203-OcCB	U	1.98	pg/g	1.98
74472-52-9	204-OcCB	U	1.98	pg/g	1.98
74472-53-0	205-OcCB	U	1.98	pg/g	1.98
40186-72-9	206-NoCB	U	1.98	pg/g	1.98
52663-79-3	207-NoCB	U	1.98	pg/g	1.98
52663-77-1	208-NoCB	U	1.98	pg/g	1.98
2051-24-3	209-DeCB		2.59	pg/g	1.98
1336-36-3	Total PCB Congeners		51.3	pg/g	1.98

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		50.7	198	pg/g	25.6	(15%-150%)
13C-3-MoCB		71.4	198	pg/g	36.1	(15%-150%)
13C-4-DiCB	Q	38.2	198	pg/g	19.3 *	(25%-150%)
13C-15-DiCB		164	198	pg/g	83.1	(25%-150%)
13C-19-TrCB		87.7	198	pg/g	44.3	(25%-150%)
13C-37-TrCB		168	198	pg/g	84.9	(25%-150%)
13C-54-TeCB		59.9	198	pg/g	30.3	(25%-150%)
13C-77-TeCB		228	198	pg/g	115	(25%-150%)
13C-81-TeCB		230	198	pg/g	116	(25%-150%)
13C-104-PeCB		72.8	198	pg/g	36.8	(25%-150%)
13C-105-PeCB		167	198	pg/g	84.3	(25%-150%)
13C-114-PeCB		163	198	pg/g	82.3	(25%-150%)
13C-118-PeCB		167	198	pg/g	84.5	(25%-150%)
13C-123-PeCB		169	198	pg/g	85.5	(25%-150%)
13C-126-PeCB		165	198	pg/g	83.6	(25%-150%)
13C-155-HxCB		90.8	198	pg/g	45.9	(25%-150%)
13C-156-HxCB	C	278	396	pg/g	70.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		149	198	pg/g	75.1	(25%-150%)
13C-169-HxCB		138	198	pg/g	69.7	(25%-150%)
13C-188-HpCB		133	198	pg/g	67.2	(25%-150%)
13C-189-HpCB		151	198	pg/g	76.3	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796007	<b>Date Collected:</b> 09/10/2016 12:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 33.5
<b>Client ID:</b> VC-A-04-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 04:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 15.2 g	

CAS No.	Parmname	Qual	Result	Units	PQL
<b>Surrogate/Tracer recovery</b>					
13C-202-OcCB		Qual	Result	Nominal	Units Recovery% Acceptable Limits
			141	198	pg/g 71.3 (25%-150%)
13C-205-OcCB			150	198	pg/g 75.7 (25%-150%)
13C-206-NoCB			115	198	pg/g 57.9 (25%-150%)
13C-208-NoCB			138	198	pg/g 69.9 (25%-150%)
13C-209-DeCB			122	198	pg/g 61.8 (25%-150%)
13C-111-PeCB			154	198	pg/g 77.6 (30%-135%)
13C-28-TrCB			110	198	pg/g 55.5 (30%-135%)
13C-178-HpCB			136	198	pg/g 68.5 (30%-135%)

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796008	<b>Date Collected:</b> 09/10/2016 12:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 19.3
<b>Client ID:</b> VC-A-04-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/14/2016 05:13	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a_2-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.16 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.88	pg/g	1.88
2051-61-8	2-MoCB	U	1.88	pg/g	1.88
2051-62-9	3-MoCB	U	1.88	pg/g	1.88
13029-08-8	4-DiCB	QU	1.88	pg/g	1.88
16605-91-7	5-DiCB	U	1.88	pg/g	1.88
25569-80-6	6-DiCB	U	1.88	pg/g	1.88
33284-50-3	7-DiCB	U	1.88	pg/g	1.88
34883-43-7	8-DiCB	U	1.88	pg/g	1.88
34883-39-1	9-DiCB	U	1.88	pg/g	1.88
33146-45-1	10-DiCB	U	1.88	pg/g	1.88
2050-67-1	11-DiCB	B	5.52	pg/g	3.77
2974-92-7	12-DiCB	CU	3.77	pg/g	3.77
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.88	pg/g	1.88
2050-68-2	15-DiCB	U	1.88	pg/g	1.88
38444-78-9	16-TrCB	U	1.88	pg/g	1.88
37680-66-3	17-TrCB	U	1.88	pg/g	1.88
37680-65-2	18-TrCB	CU	3.77	pg/g	3.77
38444-73-4	19-TrCB	U	1.88	pg/g	1.88
38444-84-7	20-TrCB	CU	3.77	pg/g	3.77
55702-46-0	21-TrCB	CU	3.77	pg/g	3.77
38444-85-8	22-TrCB	U	1.88	pg/g	1.88
55720-44-0	23-TrCB	U	1.88	pg/g	1.88
55702-45-9	24-TrCB	U	1.88	pg/g	1.88
55712-37-3	25-TrCB	U	1.88	pg/g	1.88
38444-81-4	26-TrCB	CU	3.77	pg/g	3.77
38444-76-7	27-TrCB	U	1.88	pg/g	1.88
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.88	pg/g	1.88
38444-77-8	32-TrCB	U	1.88	pg/g	1.88

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**Q** Quantitative Interference; value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796008	<b>Date Collected:</b> 09/10/2016 12:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 19.3
<b>Client ID:</b> VC-A-04-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/14/2016 05:13	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a_2-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.16 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.88	pg/g	1.88
37680-69-6	35-TrCB	U	1.88	pg/g	1.88
38444-87-0	36-TrCB	U	1.88	pg/g	1.88
38444-90-5	37-TrCB	U	1.88	pg/g	1.88
53555-66-1	38-TrCB	U	1.88	pg/g	1.88
38444-88-1	39-TrCB	U	1.88	pg/g	1.88
38444-93-8	40-TeCB	CU	3.77	pg/g	3.77
52663-59-9	41-TeCB	U	1.88	pg/g	1.88
36559-22-5	42-TeCB	U	1.88	pg/g	1.88
70362-46-8	43-TeCB	U	1.88	pg/g	1.88
41464-39-5	44-TeCB	CU	5.65	pg/g	5.65
70362-45-7	45-TeCB	CU	3.77	pg/g	3.77
41464-47-5	46-TeCB	U	1.88	pg/g	1.88
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.88	pg/g	1.88
41464-40-8	49-TeCB	CU	3.77	pg/g	3.77
62796-65-0	50-TeCB	CU	3.77	pg/g	3.77
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.88	pg/g	1.88
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.88	pg/g	1.88
74338-24-2	55-TeCB	U	1.88	pg/g	1.88
41464-43-1	56-TeCB	U	1.88	pg/g	1.88
70424-67-8	57-TeCB	U	1.88	pg/g	1.88
41464-49-7	58-TeCB	U	1.88	pg/g	1.88
74472-33-6	59-TeCB	CU	5.65	pg/g	5.65
33025-41-1	60-TeCB	U	1.88	pg/g	1.88
33284-53-6	61-TeCB	CU	7.53	pg/g	7.53
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.88	pg/g	1.88
52663-58-8	64-TeCB	U	1.88	pg/g	1.88

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796008	<b>Date Collected:</b> 09/10/2016 12:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 19.3
<b>Client ID:</b> VC-A-04-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 05:13	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.16 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.88	pg/g	1.88
73575-53-8	67-TeCB	U	1.88	pg/g	1.88
73575-52-7	68-TeCB	U	1.88	pg/g	1.88
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.88	pg/g	1.88
74338-23-1	73-TeCB	U	1.88	pg/g	1.88
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.88	pg/g	1.88
70362-49-1	78-TeCB	U	1.88	pg/g	1.88
41464-48-6	79-TeCB	U	1.88	pg/g	1.88
33284-52-5	80-TeCB	U	1.88	pg/g	1.88
70362-50-4	81-TeCB	U	1.88	pg/g	1.88
52663-62-4	82-PeCB	U	1.88	pg/g	1.88
60145-20-2	83-PeCB	U	1.88	pg/g	1.88
52663-60-2	84-PeCB	U	1.88	pg/g	1.88
65510-45-4	85-PeCB	CU	5.65	pg/g	5.65
55312-69-1	86-PeCB	CU	11.3	pg/g	11.3
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.77	pg/g	3.77
73575-57-2	89-PeCB	U	1.88	pg/g	1.88
68194-07-0	90-PeCB	CU	5.65	pg/g	5.65
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.88	pg/g	1.88
73575-56-1	93-PeCB	CU	3.77	pg/g	3.77
73575-55-0	94-PeCB	U	1.88	pg/g	1.88
38379-99-6	95-PeCB	U	1.88	pg/g	1.88
73575-54-9	96-PeCB	U	1.88	pg/g	1.88

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**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796008  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-04-S2  
**Batch ID:** 32979  
**Run Date:** 10/14/2016 05:13  
**Data File:** c13oct16a\_2-4  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/10/2016 12:15  
**Date Received:** 09/21/2016 09:50  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 13.16 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 19.3  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.77	pg/g	3.77
38380-01-7	99-PeCB	U	1.88	pg/g	1.88
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.88	pg/g	1.88
56558-16-8	104-PeCB	U	1.88	pg/g	1.88
32598-14-4	105-PeCB	U	1.88	pg/g	1.88
70424-69-0	106-PeCB	U	1.88	pg/g	1.88
70424-68-9	107-PeCB	U	1.88	pg/g	1.88
70362-41-3	108-PeCB	CU	3.77	pg/g	3.77
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.77	pg/g	3.77
39635-32-0	111-PeCB	U	1.88	pg/g	1.88
74472-36-9	112-PeCB	U	1.88	pg/g	1.88
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.88	pg/g	1.88
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.88	pg/g	1.88
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.88	pg/g	1.88
56558-18-0	121-PeCB	U	1.88	pg/g	1.88
76842-07-4	122-PeCB	U	1.88	pg/g	1.88
65510-44-3	123-PeCB	U	1.88	pg/g	1.88
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.88	pg/g	1.88
39635-33-1	127-PeCB	U	1.88	pg/g	1.88
38380-07-3	128-HxCB	CU	3.77	pg/g	3.77

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796008	<b>Date Collected:</b> 09/10/2016 12:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 19.3
<b>Client ID:</b> VC-A-04-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 05:13	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.16 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.65	pg/g	5.65
52663-66-8	130-HxCB	U	1.88	pg/g	1.88
61798-70-7	131-HxCB	U	1.88	pg/g	1.88
38380-05-1	132-HxCB	U	1.88	pg/g	1.88
35694-04-3	133-HxCB	U	1.88	pg/g	1.88
52704-70-8	134-HxCB	U	1.88	pg/g	1.88
52744-13-5	135-HxCB	CU	3.77	pg/g	3.77
38411-22-2	136-HxCB	U	1.88	pg/g	1.88
35694-06-5	137-HxCB	U	1.88	pg/g	1.88
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.77	pg/g	3.77
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.88	pg/g	1.88
41411-61-4	142-HxCB	U	1.88	pg/g	1.88
68194-15-0	143-HxCB	U	1.88	pg/g	1.88
68194-14-9	144-HxCB	U	1.88	pg/g	1.88
74472-40-5	145-HxCB	U	1.88	pg/g	1.88
51908-16-8	146-HxCB	U	1.88	pg/g	1.88
68194-13-8	147-HxCB	CU	3.77	pg/g	3.77
74472-41-6	148-HxCB	U	1.88	pg/g	1.88
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.88	pg/g	1.88
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.88	pg/g	1.88
35065-27-1	153-HxCB	CU	3.77	pg/g	3.77
60145-22-4	154-HxCB	U	1.88	pg/g	1.88
33979-03-2	155-HxCB	U	1.88	pg/g	1.88
38380-08-4	156-HxCB	CU	3.77	pg/g	3.77
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.88	pg/g	1.88
39635-35-3	159-HxCB	U	1.88	pg/g	1.88
41411-62-5	160-HxCB	U	1.88	pg/g	1.88

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796008	<b>Date Collected:</b> 09/10/2016 12:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 19.3
<b>Client ID:</b> VC-A-04-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/14/2016 05:13	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a_2-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.16 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.88	pg/g	1.88
39635-34-2	162-HxCB	U	1.88	pg/g	1.88
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.88	pg/g	1.88
74472-46-1	165-HxCB	U	1.88	pg/g	1.88
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.88	pg/g	1.88
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.88	pg/g	1.88
35065-30-6	170-HpCB	U	1.88	pg/g	1.88
52663-71-5	171-HpCB	CU	3.77	pg/g	3.77
52663-74-8	172-HpCB	U	1.88	pg/g	1.88
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.88	pg/g	1.88
40186-70-7	175-HpCB	U	1.88	pg/g	1.88
52663-65-7	176-HpCB	U	1.88	pg/g	1.88
52663-70-4	177-HpCB	U	1.88	pg/g	1.88
52663-67-9	178-HpCB	U	1.88	pg/g	1.88
52663-64-6	179-HpCB	U	1.88	pg/g	1.88
35065-29-3	180-HpCB	CU	3.77	pg/g	3.77
74472-47-2	181-HpCB	U	1.88	pg/g	1.88
60145-23-5	182-HpCB	U	1.88	pg/g	1.88
52663-69-1	183-HpCB	CU	3.77	pg/g	3.77
74472-48-3	184-HpCB	U	1.88	pg/g	1.88
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.88	pg/g	1.88
52663-68-0	187-HpCB	U	1.88	pg/g	1.88
74487-85-7	188-HpCB	U	1.88	pg/g	1.88
39635-31-9	189-HpCB	U	1.88	pg/g	1.88
41411-64-7	190-HpCB	U	1.88	pg/g	1.88
74472-50-7	191-HpCB	U	1.88	pg/g	1.88
74472-51-8	192-HpCB	U	1.88	pg/g	1.88

**Comments:**

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- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- Q** Quantitative Interference; value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796008	<b>Date Collected:</b> 09/10/2016 12:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 19.3
<b>Client ID:</b> VC-A-04-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 05:13	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.16 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.88	pg/g	1.88
52663-78-2	195-OcCB	U	1.88	pg/g	1.88
42740-50-1	196-OcCB	U	1.88	pg/g	1.88
33091-17-7	197-OcCB	CU	3.77	pg/g	3.77
68194-17-2	198-OcCB	CU	3.77	pg/g	3.77
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.88	pg/g	1.88
2136-99-4	202-OcCB	U	1.88	pg/g	1.88
52663-76-0	203-OcCB	U	1.88	pg/g	1.88
74472-52-9	204-OcCB	U	1.88	pg/g	1.88
74472-53-0	205-OcCB	U	1.88	pg/g	1.88
40186-72-9	206-NoCB	U	1.88	pg/g	1.88
52663-79-3	207-NoCB	U	1.88	pg/g	1.88
52663-77-1	208-NoCB	U	1.88	pg/g	1.88
2051-24-3	209-DeCB	U	1.88	pg/g	1.88
1336-36-3	Total PCB Congeners	B	5.52	pg/g	1.88

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		57.2	188	pg/g	30.4	(15%-150%)
13C-3-MoCB		77.2	188	pg/g	41.0	(15%-150%)
13C-4-DiCB	Q	37.7	188	pg/g	20.0 *	(25%-150%)
13C-15-DiCB		171	188	pg/g	90.9	(25%-150%)
13C-19-TrCB		93.8	188	pg/g	49.8	(25%-150%)
13C-37-TrCB		169	188	pg/g	89.6	(25%-150%)
13C-54-TeCB		68.7	188	pg/g	36.5	(25%-150%)
13C-77-TeCB		233	188	pg/g	124	(25%-150%)
13C-81-TeCB		234	188	pg/g	124	(25%-150%)
13C-104-PeCB		73.2	188	pg/g	38.8	(25%-150%)
13C-105-PeCB		169	188	pg/g	90.0	(25%-150%)
13C-114-PeCB		167	188	pg/g	88.5	(25%-150%)
13C-118-PeCB		172	188	pg/g	91.1	(25%-150%)
13C-123-PeCB		173	188	pg/g	91.6	(25%-150%)
13C-126-PeCB		172	188	pg/g	91.1	(25%-150%)
13C-155-HxCB		88.4	188	pg/g	46.9	(25%-150%)
13C-156-HxCB	C	280	377	pg/g	74.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		147	188	pg/g	77.9	(25%-150%)
13C-169-HxCB		137	188	pg/g	72.6	(25%-150%)
13C-188-HpCB		129	188	pg/g	68.5	(25%-150%)
13C-189-HpCB		147	188	pg/g	77.9	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796008	<b>Date Collected:</b> 09/10/2016 12:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 19.3
<b>Client ID:</b> VC-A-04-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 05:13	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 13.16 g	

CAS No.	Parmname	Qual	Result	Units	PQL
<b>Surrogate/Tracer recovery</b>					
13C-202-OcCB		Qual	Result	Nominal	Units Recovery% Acceptable Limits
			137	188	pg/g 72.7 (25%-150%)
13C-205-OcCB			146	188	pg/g 77.6 (25%-150%)
13C-206-NoCB			122	188	pg/g 64.6 (25%-150%)
13C-208-NoCB			134	188	pg/g 71.2 (25%-150%)
13C-209-DeCB			110	188	pg/g 58.4 (25%-150%)
13C-111-PeCB			139	188	pg/g 73.7 (30%-135%)
13C-28-TrCB			104	188	pg/g 55.1 (30%-135%)
13C-178-HpCB			120	188	pg/g 64.0 (30%-135%)

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796009	<b>Date Collected:</b> 09/10/2016 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 26.2
<b>Client ID:</b> VC-A-04-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 06:19	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 14.18 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.91	pg/g	1.91
2051-61-8	2-MoCB	U	1.91	pg/g	1.91
2051-62-9	3-MoCB	U	1.91	pg/g	1.91
13029-08-8	4-DiCB	QU	1.91	pg/g	1.91
16605-91-7	5-DiCB	U	1.91	pg/g	1.91
25569-80-6	6-DiCB	U	1.91	pg/g	1.91
33284-50-3	7-DiCB	U	1.91	pg/g	1.91
34883-43-7	8-DiCB	U	1.91	pg/g	1.91
34883-39-1	9-DiCB	U	1.91	pg/g	1.91
33146-45-1	10-DiCB	U	1.91	pg/g	1.91
2050-67-1	11-DiCB	B	7.58	pg/g	3.82
2974-92-7	12-DiCB	CU	3.82	pg/g	3.82
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.91	pg/g	1.91
2050-68-2	15-DiCB	U	1.91	pg/g	1.91
38444-78-9	16-TrCB	U	1.91	pg/g	1.91
37680-66-3	17-TrCB	U	1.91	pg/g	1.91
37680-65-2	18-TrCB	CU	3.82	pg/g	3.82
38444-73-4	19-TrCB	U	1.91	pg/g	1.91
38444-84-7	20-TrCB	CU	3.82	pg/g	3.82
55702-46-0	21-TrCB	CU	3.82	pg/g	3.82
38444-85-8	22-TrCB	U	1.91	pg/g	1.91
55720-44-0	23-TrCB	U	1.91	pg/g	1.91
55702-45-9	24-TrCB	U	1.91	pg/g	1.91
55712-37-3	25-TrCB	U	1.91	pg/g	1.91
38444-81-4	26-TrCB	CU	3.82	pg/g	3.82
38444-76-7	27-TrCB	U	1.91	pg/g	1.91
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.91	pg/g	1.91
38444-77-8	32-TrCB	U	1.91	pg/g	1.91

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**PCB Congeners**  
**Certificate of Analysis**  
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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796009	<b>Date Collected:</b> 09/10/2016 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 26.2
<b>Client ID:</b> VC-A-04-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 06:19	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 14.18 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.91	pg/g	1.91
37680-69-6	35-TrCB	U	1.91	pg/g	1.91
38444-87-0	36-TrCB	U	1.91	pg/g	1.91
38444-90-5	37-TrCB	U	1.91	pg/g	1.91
53555-66-1	38-TrCB	U	1.91	pg/g	1.91
38444-88-1	39-TrCB	U	1.91	pg/g	1.91
38444-93-8	40-TeCB	CU	3.82	pg/g	3.82
52663-59-9	41-TeCB	U	1.91	pg/g	1.91
36559-22-5	42-TeCB	U	1.91	pg/g	1.91
70362-46-8	43-TeCB	U	1.91	pg/g	1.91
41464-39-5	44-TeCB	CU	5.73	pg/g	5.73
70362-45-7	45-TeCB	CU	3.82	pg/g	3.82
41464-47-5	46-TeCB	U	1.91	pg/g	1.91
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.91	pg/g	1.91
41464-40-8	49-TeCB	CU	3.82	pg/g	3.82
62796-65-0	50-TeCB	CU	3.82	pg/g	3.82
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.91	pg/g	1.91
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.91	pg/g	1.91
74338-24-2	55-TeCB	U	1.91	pg/g	1.91
41464-43-1	56-TeCB	U	1.91	pg/g	1.91
70424-67-8	57-TeCB	U	1.91	pg/g	1.91
41464-49-7	58-TeCB	U	1.91	pg/g	1.91
74472-33-6	59-TeCB	CU	5.73	pg/g	5.73
33025-41-1	60-TeCB	U	1.91	pg/g	1.91
33284-53-6	61-TeCB	CU	7.64	pg/g	7.64
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.91	pg/g	1.91
52663-58-8	64-TeCB	U	1.91	pg/g	1.91

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796009	<b>Date Collected:</b> 09/10/2016 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 26.2
<b>Client ID:</b> VC-A-04-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 06:19	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 14.18 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.91	pg/g	1.91
73575-53-8	67-TeCB	U	1.91	pg/g	1.91
73575-52-7	68-TeCB	U	1.91	pg/g	1.91
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.91	pg/g	1.91
74338-23-1	73-TeCB	U	1.91	pg/g	1.91
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.91	pg/g	1.91
70362-49-1	78-TeCB	U	1.91	pg/g	1.91
41464-48-6	79-TeCB	U	1.91	pg/g	1.91
33284-52-5	80-TeCB	U	1.91	pg/g	1.91
70362-50-4	81-TeCB	U	1.91	pg/g	1.91
52663-62-4	82-PeCB	U	1.91	pg/g	1.91
60145-20-2	83-PeCB	U	1.91	pg/g	1.91
52663-60-2	84-PeCB	U	1.91	pg/g	1.91
65510-45-4	85-PeCB	CU	5.73	pg/g	5.73
55312-69-1	86-PeCB	CU	11.5	pg/g	11.5
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.82	pg/g	3.82
73575-57-2	89-PeCB	U	1.91	pg/g	1.91
68194-07-0	90-PeCB	CU	5.73	pg/g	5.73
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.91	pg/g	1.91
73575-56-1	93-PeCB	CU	3.82	pg/g	3.82
73575-55-0	94-PeCB	U	1.91	pg/g	1.91
38379-99-6	95-PeCB	U	1.91	pg/g	1.91
73575-54-9	96-PeCB	U	1.91	pg/g	1.91

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796009	<b>Date Collected:</b> 09/10/2016 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 26.2
<b>Client ID:</b> VC-A-04-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 06:19	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 14.18 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.82	pg/g	3.82
38380-01-7	99-PeCB	U	1.91	pg/g	1.91
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.91	pg/g	1.91
56558-16-8	104-PeCB	U	1.91	pg/g	1.91
32598-14-4	105-PeCB	U	1.91	pg/g	1.91
70424-69-0	106-PeCB	U	1.91	pg/g	1.91
70424-68-9	107-PeCB	U	1.91	pg/g	1.91
70362-41-3	108-PeCB	CU	3.82	pg/g	3.82
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.82	pg/g	3.82
39635-32-0	111-PeCB	U	1.91	pg/g	1.91
74472-36-9	112-PeCB	U	1.91	pg/g	1.91
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.91	pg/g	1.91
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.91	pg/g	1.91
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.91	pg/g	1.91
56558-18-0	121-PeCB	U	1.91	pg/g	1.91
76842-07-4	122-PeCB	U	1.91	pg/g	1.91
65510-44-3	123-PeCB	U	1.91	pg/g	1.91
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.91	pg/g	1.91
39635-33-1	127-PeCB	U	1.91	pg/g	1.91
38380-07-3	128-HxCB	CU	3.82	pg/g	3.82

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796009  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-04-S3  
**Batch ID:** 32979  
**Run Date:** 10/14/2016 06:19  
**Data File:** c13oct16a\_2-5  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/10/2016 12:30  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 14.18 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 26.2  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.73	pg/g	5.73
52663-66-8	130-HxCB	U	1.91	pg/g	1.91
61798-70-7	131-HxCB	U	1.91	pg/g	1.91
38380-05-1	132-HxCB	U	1.91	pg/g	1.91
35694-04-3	133-HxCB	U	1.91	pg/g	1.91
52704-70-8	134-HxCB	U	1.91	pg/g	1.91
52744-13-5	135-HxCB	CU	3.82	pg/g	3.82
38411-22-2	136-HxCB	U	1.91	pg/g	1.91
35694-06-5	137-HxCB	U	1.91	pg/g	1.91
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.82	pg/g	3.82
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.91	pg/g	1.91
41411-61-4	142-HxCB	U	1.91	pg/g	1.91
68194-15-0	143-HxCB	U	1.91	pg/g	1.91
68194-14-9	144-HxCB	U	1.91	pg/g	1.91
74472-40-5	145-HxCB	U	1.91	pg/g	1.91
51908-16-8	146-HxCB	U	1.91	pg/g	1.91
68194-13-8	147-HxCB	CU	3.82	pg/g	3.82
74472-41-6	148-HxCB	U	1.91	pg/g	1.91
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.91	pg/g	1.91
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.91	pg/g	1.91
35065-27-1	153-HxCB	CU	3.82	pg/g	3.82
60145-22-4	154-HxCB	U	1.91	pg/g	1.91
33979-03-2	155-HxCB	U	1.91	pg/g	1.91
38380-08-4	156-HxCB	CU	3.82	pg/g	3.82
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.91	pg/g	1.91
39635-35-3	159-HxCB	U	1.91	pg/g	1.91
41411-62-5	160-HxCB	U	1.91	pg/g	1.91

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796009	<b>Date Collected:</b> 09/10/2016 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 26.2
<b>Client ID:</b> VC-A-04-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/14/2016 06:19	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a_2-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 14.18 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.91	pg/g	1.91
39635-34-2	162-HxCB	U	1.91	pg/g	1.91
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.91	pg/g	1.91
74472-46-1	165-HxCB	U	1.91	pg/g	1.91
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.91	pg/g	1.91
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.91	pg/g	1.91
35065-30-6	170-HpCB	U	1.91	pg/g	1.91
52663-71-5	171-HpCB	CU	3.82	pg/g	3.82
52663-74-8	172-HpCB	U	1.91	pg/g	1.91
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.91	pg/g	1.91
40186-70-7	175-HpCB	U	1.91	pg/g	1.91
52663-65-7	176-HpCB	U	1.91	pg/g	1.91
52663-70-4	177-HpCB	U	1.91	pg/g	1.91
52663-67-9	178-HpCB	U	1.91	pg/g	1.91
52663-64-6	179-HpCB	U	1.91	pg/g	1.91
35065-29-3	180-HpCB	CU	3.82	pg/g	3.82
74472-47-2	181-HpCB	U	1.91	pg/g	1.91
60145-23-5	182-HpCB	U	1.91	pg/g	1.91
52663-69-1	183-HpCB	CU	3.82	pg/g	3.82
74472-48-3	184-HpCB	U	1.91	pg/g	1.91
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.91	pg/g	1.91
52663-68-0	187-HpCB	U	1.91	pg/g	1.91
74487-85-7	188-HpCB	U	1.91	pg/g	1.91
39635-31-9	189-HpCB	U	1.91	pg/g	1.91
41411-64-7	190-HpCB	U	1.91	pg/g	1.91
74472-50-7	191-HpCB	U	1.91	pg/g	1.91
74472-51-8	192-HpCB	U	1.91	pg/g	1.91

**Comments:**

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796009	<b>Date Collected:</b> 09/10/2016 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 26.2
<b>Client ID:</b> VC-A-04-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/14/2016 06:19	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a_2-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 14.18 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.91	pg/g	1.91
52663-78-2	195-OcCB	U	1.91	pg/g	1.91
42740-50-1	196-OcCB	U	1.91	pg/g	1.91
33091-17-7	197-OcCB	CU	3.82	pg/g	3.82
68194-17-2	198-OcCB	CU	3.82	pg/g	3.82
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.91	pg/g	1.91
2136-99-4	202-OcCB	U	1.91	pg/g	1.91
52663-76-0	203-OcCB	U	1.91	pg/g	1.91
74472-52-9	204-OcCB	U	1.91	pg/g	1.91
74472-53-0	205-OcCB	U	1.91	pg/g	1.91
40186-72-9	206-NoCB	U	1.91	pg/g	1.91
52663-79-3	207-NoCB	U	1.91	pg/g	1.91
52663-77-1	208-NoCB	U	1.91	pg/g	1.91
2051-24-3	209-DeCB	U	1.91	pg/g	1.91
1336-36-3	Total PCB Congeners	B	7.58	pg/g	1.91

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		29.7	191	pg/g	15.6	(15%-150%)
13C-3-MoCB		50.6	191	pg/g	26.5	(15%-150%)
13C-4-DiCB	Q	24.7	191	pg/g	12.9 *	(25%-150%)
13C-15-DiCB		144	191	pg/g	75.6	(25%-150%)
13C-19-TrCB		61.7	191	pg/g	32.3	(25%-150%)
13C-37-TrCB		148	191	pg/g	77.3	(25%-150%)
13C-54-TeCB		45.7	191	pg/g	23.9 *	(25%-150%)
13C-77-TeCB		211	191	pg/g	111	(25%-150%)
13C-81-TeCB		213	191	pg/g	111	(25%-150%)
13C-104-PeCB		56.3	191	pg/g	29.5	(25%-150%)
13C-105-PeCB		160	191	pg/g	83.6	(25%-150%)
13C-114-PeCB		155	191	pg/g	81.3	(25%-150%)
13C-118-PeCB		159	191	pg/g	83.0	(25%-150%)
13C-123-PeCB		159	191	pg/g	83.4	(25%-150%)
13C-126-PeCB		160	191	pg/g	83.5	(25%-150%)
13C-155-HxCB		74.9	191	pg/g	39.2	(25%-150%)
13C-156-HxCB	C	266	382	pg/g	69.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		139	191	pg/g	72.8	(25%-150%)
13C-169-HxCB		128	191	pg/g	66.8	(25%-150%)
13C-188-HpCB		120	191	pg/g	62.7	(25%-150%)
13C-189-HpCB		142	191	pg/g	74.6	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796009	<b>Date Collected:</b> 09/10/2016 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 26.2
<b>Client ID:</b> VC-A-04-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 06:19	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 14.18 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			128	191	pg/g	67.2 (25%-150%)
13C-205-OcCB			143	191	pg/g	75.1 (25%-150%)
13C-206-NoCB			124	191	pg/g	64.8 (25%-150%)
13C-208-NoCB			130	191	pg/g	67.8 (25%-150%)
13C-209-DeCB			110	191	pg/g	57.5 (25%-150%)
13C-111-PeCB			151	191	pg/g	79.1 (30%-135%)
13C-28-TrCB			112	191	pg/g	58.5 (30%-135%)
13C-178-HpCB			133	191	pg/g	69.9 (30%-135%)

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796010	<b>Date Collected:</b> 09/10/2016 13:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 14.2
<b>Client ID:</b> VC-A-05		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/14/2016 07:25	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a_2-6		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.6 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.85	pg/g	1.85
2051-61-8	2-MoCB	U	1.85	pg/g	1.85
2051-62-9	3-MoCB	U	1.85	pg/g	1.85
13029-08-8	4-DiCB	QU	1.85	pg/g	1.85
16605-91-7	5-DiCB	U	1.85	pg/g	1.85
25569-80-6	6-DiCB	U	1.85	pg/g	1.85
33284-50-3	7-DiCB	U	1.85	pg/g	1.85
34883-43-7	8-DiCB	U	1.85	pg/g	1.85
34883-39-1	9-DiCB	U	1.85	pg/g	1.85
33146-45-1	10-DiCB	U	1.85	pg/g	1.85
2050-67-1	11-DiCB	B	7.28	pg/g	3.70
2974-92-7	12-DiCB	CU	3.7	pg/g	3.70
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.85	pg/g	1.85
2050-68-2	15-DiCB	U	1.85	pg/g	1.85
38444-78-9	16-TrCB	U	1.85	pg/g	1.85
37680-66-3	17-TrCB	U	1.85	pg/g	1.85
37680-65-2	18-TrCB	CU	3.7	pg/g	3.70
38444-73-4	19-TrCB	U	1.85	pg/g	1.85
38444-84-7	20-TrCB	CU	3.7	pg/g	3.70
55702-46-0	21-TrCB	CU	3.7	pg/g	3.70
38444-85-8	22-TrCB	U	1.85	pg/g	1.85
55720-44-0	23-TrCB	U	1.85	pg/g	1.85
55702-45-9	24-TrCB	U	1.85	pg/g	1.85
55712-37-3	25-TrCB	U	1.85	pg/g	1.85
38444-81-4	26-TrCB	CU	3.7	pg/g	3.70
38444-76-7	27-TrCB	U	1.85	pg/g	1.85
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.85	pg/g	1.85
38444-77-8	32-TrCB	U	1.85	pg/g	1.85

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796010	<b>Date Collected:</b> 09/10/2016 13:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 14.2
<b>Client ID:</b> VC-A-05		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 07:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.6 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.85	pg/g	1.85
37680-69-6	35-TrCB	U	1.85	pg/g	1.85
38444-87-0	36-TrCB	U	1.85	pg/g	1.85
38444-90-5	37-TrCB	U	1.85	pg/g	1.85
53555-66-1	38-TrCB	U	1.85	pg/g	1.85
38444-88-1	39-TrCB	U	1.85	pg/g	1.85
38444-93-8	40-TeCB	CU	3.7	pg/g	3.70
52663-59-9	41-TeCB	U	1.85	pg/g	1.85
36559-22-5	42-TeCB	U	1.85	pg/g	1.85
70362-46-8	43-TeCB	U	1.85	pg/g	1.85
41464-39-5	44-TeCB	CU	5.55	pg/g	5.55
70362-45-7	45-TeCB	CU	3.7	pg/g	3.70
41464-47-5	46-TeCB	U	1.85	pg/g	1.85
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.85	pg/g	1.85
41464-40-8	49-TeCB	CU	3.7	pg/g	3.70
62796-65-0	50-TeCB	CU	3.7	pg/g	3.70
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.85	pg/g	1.85
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.85	pg/g	1.85
74338-24-2	55-TeCB	U	1.85	pg/g	1.85
41464-43-1	56-TeCB	U	1.85	pg/g	1.85
70424-67-8	57-TeCB	U	1.85	pg/g	1.85
41464-49-7	58-TeCB	U	1.85	pg/g	1.85
74472-33-6	59-TeCB	CU	5.55	pg/g	5.55
33025-41-1	60-TeCB	U	1.85	pg/g	1.85
33284-53-6	61-TeCB	CU	7.4	pg/g	7.40
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.85	pg/g	1.85
52663-58-8	64-TeCB	U	1.85	pg/g	1.85

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796010	<b>Date Collected:</b> 09/10/2016 13:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 14.2
<b>Client ID:</b> VC-A-05		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 07:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.6 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.85	pg/g	1.85
73575-53-8	67-TeCB	U	1.85	pg/g	1.85
73575-52-7	68-TeCB	U	1.85	pg/g	1.85
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.85	pg/g	1.85
74338-23-1	73-TeCB	U	1.85	pg/g	1.85
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.85	pg/g	1.85
70362-49-1	78-TeCB	U	1.85	pg/g	1.85
41464-48-6	79-TeCB	U	1.85	pg/g	1.85
33284-52-5	80-TeCB	U	1.85	pg/g	1.85
70362-50-4	81-TeCB	U	1.85	pg/g	1.85
52663-62-4	82-PeCB	U	1.85	pg/g	1.85
60145-20-2	83-PeCB	U	1.85	pg/g	1.85
52663-60-2	84-PeCB	U	1.85	pg/g	1.85
65510-45-4	85-PeCB	CU	5.55	pg/g	5.55
55312-69-1	86-PeCB	CU	11.1	pg/g	11.1
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.7	pg/g	3.70
73575-57-2	89-PeCB	U	1.85	pg/g	1.85
68194-07-0	90-PeCB	CU	5.55	pg/g	5.55
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.85	pg/g	1.85
73575-56-1	93-PeCB	CU	3.7	pg/g	3.70
73575-55-0	94-PeCB	U	1.85	pg/g	1.85
38379-99-6	95-PeCB	U	1.85	pg/g	1.85
73575-54-9	96-PeCB	U	1.85	pg/g	1.85

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796010	<b>Date Collected:</b> 09/10/2016 13:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 14.2
<b>Client ID:</b> VC-A-05		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/14/2016 07:25	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a_2-6		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.6 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.7	pg/g	3.70
38380-01-7	99-PeCB	U	1.85	pg/g	1.85
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.85	pg/g	1.85
56558-16-8	104-PeCB	U	1.85	pg/g	1.85
32598-14-4	105-PeCB	U	1.85	pg/g	1.85
70424-69-0	106-PeCB	U	1.85	pg/g	1.85
70424-68-9	107-PeCB	U	1.85	pg/g	1.85
70362-41-3	108-PeCB	CU	3.7	pg/g	3.70
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.7	pg/g	3.70
39635-32-0	111-PeCB	U	1.85	pg/g	1.85
74472-36-9	112-PeCB	U	1.85	pg/g	1.85
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.85	pg/g	1.85
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.85	pg/g	1.85
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.85	pg/g	1.85
56558-18-0	121-PeCB	U	1.85	pg/g	1.85
76842-07-4	122-PeCB	U	1.85	pg/g	1.85
65510-44-3	123-PeCB	U	1.85	pg/g	1.85
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.85	pg/g	1.85
39635-33-1	127-PeCB	U	1.85	pg/g	1.85
38380-07-3	128-HxCB	CU	3.7	pg/g	3.70

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796010	<b>Date Collected:</b> 09/10/2016 13:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 14.2
<b>Client ID:</b> VC-A-05		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 07:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.6 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.55	pg/g	5.55
52663-66-8	130-HxCB	U	1.85	pg/g	1.85
61798-70-7	131-HxCB	U	1.85	pg/g	1.85
38380-05-1	132-HxCB	U	1.85	pg/g	1.85
35694-04-3	133-HxCB	U	1.85	pg/g	1.85
52704-70-8	134-HxCB	U	1.85	pg/g	1.85
52744-13-5	135-HxCB	CU	3.7	pg/g	3.70
38411-22-2	136-HxCB	U	1.85	pg/g	1.85
35694-06-5	137-HxCB	U	1.85	pg/g	1.85
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.7	pg/g	3.70
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.85	pg/g	1.85
41411-61-4	142-HxCB	U	1.85	pg/g	1.85
68194-15-0	143-HxCB	U	1.85	pg/g	1.85
68194-14-9	144-HxCB	U	1.85	pg/g	1.85
74472-40-5	145-HxCB	U	1.85	pg/g	1.85
51908-16-8	146-HxCB	U	1.85	pg/g	1.85
68194-13-8	147-HxCB	CU	3.7	pg/g	3.70
74472-41-6	148-HxCB	U	1.85	pg/g	1.85
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.85	pg/g	1.85
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.85	pg/g	1.85
35065-27-1	153-HxCB	CU	3.7	pg/g	3.70
60145-22-4	154-HxCB	U	1.85	pg/g	1.85
33979-03-2	155-HxCB	U	1.85	pg/g	1.85
38380-08-4	156-HxCB	CU	3.7	pg/g	3.70
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.85	pg/g	1.85
39635-35-3	159-HxCB	U	1.85	pg/g	1.85
41411-62-5	160-HxCB	U	1.85	pg/g	1.85

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**Q** Quantitative Interference; value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796010	<b>Date Collected:</b> 09/10/2016 13:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 14.2
<b>Client ID:</b> VC-A-05		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 07:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.6 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.85	pg/g	1.85
39635-34-2	162-HxCB	U	1.85	pg/g	1.85
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.85	pg/g	1.85
74472-46-1	165-HxCB	U	1.85	pg/g	1.85
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.85	pg/g	1.85
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.85	pg/g	1.85
35065-30-6	170-HpCB	U	1.85	pg/g	1.85
52663-71-5	171-HpCB	CU	3.7	pg/g	3.70
52663-74-8	172-HpCB	U	1.85	pg/g	1.85
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.85	pg/g	1.85
40186-70-7	175-HpCB	U	1.85	pg/g	1.85
52663-65-7	176-HpCB	U	1.85	pg/g	1.85
52663-70-4	177-HpCB	U	1.85	pg/g	1.85
52663-67-9	178-HpCB	U	1.85	pg/g	1.85
52663-64-6	179-HpCB	U	1.85	pg/g	1.85
35065-29-3	180-HpCB	CU	3.7	pg/g	3.70
74472-47-2	181-HpCB	U	1.85	pg/g	1.85
60145-23-5	182-HpCB	U	1.85	pg/g	1.85
52663-69-1	183-HpCB	CU	3.7	pg/g	3.70
74472-48-3	184-HpCB	U	1.85	pg/g	1.85
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.85	pg/g	1.85
52663-68-0	187-HpCB	U	1.85	pg/g	1.85
74487-85-7	188-HpCB	U	1.85	pg/g	1.85
39635-31-9	189-HpCB	U	1.85	pg/g	1.85
41411-64-7	190-HpCB	U	1.85	pg/g	1.85
74472-50-7	191-HpCB	U	1.85	pg/g	1.85
74472-51-8	192-HpCB	U	1.85	pg/g	1.85

**Comments:**

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**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

**SDG Number:** L1629122  
**Lab Sample ID:** 9796010  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-05  
**Batch ID:** 32979  
**Run Date:** 10/14/2016 07:25  
**Data File:** c13oct16a\_2-6  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/10/2016 13:30  
**Date Received:** 09/21/2016 09:50  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.6 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 14.2  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.85	pg/g	1.85
52663-78-2	195-OcCB	U	1.85	pg/g	1.85
42740-50-1	196-OcCB	U	1.85	pg/g	1.85
33091-17-7	197-OcCB	CU	3.7	pg/g	3.70
68194-17-2	198-OcCB	CU	3.7	pg/g	3.70
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.85	pg/g	1.85
2136-99-4	202-OcCB	U	1.85	pg/g	1.85
52663-76-0	203-OcCB	U	1.85	pg/g	1.85
74472-52-9	204-OcCB	U	1.85	pg/g	1.85
74472-53-0	205-OcCB	U	1.85	pg/g	1.85
40186-72-9	206-NoCB	U	1.85	pg/g	1.85
52663-79-3	207-NoCB	U	1.85	pg/g	1.85
52663-77-1	208-NoCB	U	1.85	pg/g	1.85
2051-24-3	209-DeCB	U	1.85	pg/g	1.85
1336-36-3	Total PCB Congeners	B	7.28	pg/g	1.85

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		45.9	185	pg/g	24.8	(15%-150%)
13C-3-MoCB		61.4	185	pg/g	33.2	(15%-150%)
13C-4-DiCB	Q	30.6	185	pg/g	16.5 *	(25%-150%)
13C-15-DiCB		163	185	pg/g	88.4	(25%-150%)
13C-19-TrCB		78.8	185	pg/g	42.6	(25%-150%)
13C-37-TrCB		173	185	pg/g	93.8	(25%-150%)
13C-54-TeCB		56.3	185	pg/g	30.4	(25%-150%)
13C-77-TeCB		236	185	pg/g	127	(25%-150%)
13C-81-TeCB		232	185	pg/g	125	(25%-150%)
13C-104-PeCB		72.7	185	pg/g	39.3	(25%-150%)
13C-105-PeCB		177	185	pg/g	95.6	(25%-150%)
13C-114-PeCB		172	185	pg/g	93.3	(25%-150%)
13C-118-PeCB		178	185	pg/g	96.3	(25%-150%)
13C-123-PeCB		178	185	pg/g	96.4	(25%-150%)
13C-126-PeCB		177	185	pg/g	95.9	(25%-150%)
13C-155-HxCB		93.4	185	pg/g	50.5	(25%-150%)
13C-156-HxCB	C	300	370	pg/g	81.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		159	185	pg/g	85.8	(25%-150%)
13C-169-HxCB		149	185	pg/g	80.4	(25%-150%)
13C-188-HpCB		134	185	pg/g	72.5	(25%-150%)
13C-189-HpCB		163	185	pg/g	88.1	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796010	<b>Date Collected:</b> 09/10/2016 13:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 14.2
<b>Client ID:</b> VC-A-05		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 07:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.6 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			148	185	pg/g	79.8 (25%-150%)
13C-205-OcCB			162	185	pg/g	87.4 (25%-150%)
13C-206-NoCB			137	185	pg/g	74.2 (25%-150%)
13C-208-NoCB			147	185	pg/g	79.4 (25%-150%)
13C-209-DeCB			126	185	pg/g	68.2 (25%-150%)
13C-111-PeCB			158	185	pg/g	85.7 (30%-135%)
13C-28-TrCB			110	185	pg/g	59.7 (30%-135%)
13C-178-HpCB			141	185	pg/g	76.3 (30%-135%)

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796011  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-06-S1  
**Batch ID:** 32979  
**Run Date:** 10/14/2016 08:32  
**Data File:** c13oct16a\_2-7  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/10/2016 10:00  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.63 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 13.5  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.83	pg/g	1.83
2051-61-8	2-MoCB	U	1.83	pg/g	1.83
2051-62-9	3-MoCB	U	1.83	pg/g	1.83
13029-08-8	4-DiCB	QU	1.83	pg/g	1.83
16605-91-7	5-DiCB	U	1.83	pg/g	1.83
25569-80-6	6-DiCB	U	1.83	pg/g	1.83
33284-50-3	7-DiCB	U	1.83	pg/g	1.83
34883-43-7	8-DiCB	U	1.83	pg/g	1.83
34883-39-1	9-DiCB	U	1.83	pg/g	1.83
33146-45-1	10-DiCB	U	1.83	pg/g	1.83
2050-67-1	11-DiCB	B	6.50	pg/g	3.66
2974-92-7	12-DiCB	CU	3.66	pg/g	3.66
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.83	pg/g	1.83
2050-68-2	15-DiCB	U	1.83	pg/g	1.83
38444-78-9	16-TrCB	U	1.83	pg/g	1.83
37680-66-3	17-TrCB	U	1.83	pg/g	1.83
37680-65-2	18-TrCB	CU	3.66	pg/g	3.66
38444-73-4	19-TrCB	U	1.83	pg/g	1.83
38444-84-7	20-TrCB	CU	3.66	pg/g	3.66
55702-46-0	21-TrCB	CU	3.66	pg/g	3.66
38444-85-8	22-TrCB	U	1.83	pg/g	1.83
55720-44-0	23-TrCB	U	1.83	pg/g	1.83
55702-45-9	24-TrCB	U	1.83	pg/g	1.83
55712-37-3	25-TrCB	U	1.83	pg/g	1.83
38444-81-4	26-TrCB	CU	3.66	pg/g	3.66
38444-76-7	27-TrCB	U	1.83	pg/g	1.83
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.83	pg/g	1.83
38444-77-8	32-TrCB	U	1.83	pg/g	1.83

**Comments:**

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**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 2 of 8

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796011	<b>Date Collected:</b> 09/10/2016 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.5
<b>Client ID:</b> VC-A-06-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 08:32	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.63 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.83	pg/g	1.83
37680-69-6	35-TrCB	U	1.83	pg/g	1.83
38444-87-0	36-TrCB	U	1.83	pg/g	1.83
38444-90-5	37-TrCB	U	1.83	pg/g	1.83
53555-66-1	38-TrCB	U	1.83	pg/g	1.83
38444-88-1	39-TrCB	U	1.83	pg/g	1.83
38444-93-8	40-TeCB	CU	3.66	pg/g	3.66
52663-59-9	41-TeCB	U	1.83	pg/g	1.83
36559-22-5	42-TeCB	U	1.83	pg/g	1.83
70362-46-8	43-TeCB	U	1.83	pg/g	1.83
41464-39-5	44-TeCB	CU	5.49	pg/g	5.49
70362-45-7	45-TeCB	CU	3.66	pg/g	3.66
41464-47-5	46-TeCB	U	1.83	pg/g	1.83
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.83	pg/g	1.83
41464-40-8	49-TeCB	CU	3.66	pg/g	3.66
62796-65-0	50-TeCB	CU	3.66	pg/g	3.66
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.83	pg/g	1.83
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.83	pg/g	1.83
74338-24-2	55-TeCB	U	1.83	pg/g	1.83
41464-43-1	56-TeCB	U	1.83	pg/g	1.83
70424-67-8	57-TeCB	U	1.83	pg/g	1.83
41464-49-7	58-TeCB	U	1.83	pg/g	1.83
74472-33-6	59-TeCB	CU	5.49	pg/g	5.49
33025-41-1	60-TeCB	U	1.83	pg/g	1.83
33284-53-6	61-TeCB	CU	7.32	pg/g	7.32
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.83	pg/g	1.83
52663-58-8	64-TeCB	U	1.83	pg/g	1.83

**Comments:**

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- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
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- U** Analyte was analyzed for, but not detected above the specified detection limit.



**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796011	<b>Date Collected:</b> 09/10/2016 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.5
<b>Client ID:</b> VC-A-06-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 08:32	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.63 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		1.99	pg/g	1.83
73575-53-8	67-TeCB	U	1.83	pg/g	1.83
73575-52-7	68-TeCB	U	1.83	pg/g	1.83
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.83	pg/g	1.83
74338-23-1	73-TeCB	U	1.83	pg/g	1.83
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.83	pg/g	1.83
70362-49-1	78-TeCB	U	1.83	pg/g	1.83
41464-48-6	79-TeCB	U	1.83	pg/g	1.83
33284-52-5	80-TeCB	U	1.83	pg/g	1.83
70362-50-4	81-TeCB	U	1.83	pg/g	1.83
52663-62-4	82-PeCB	U	1.83	pg/g	1.83
60145-20-2	83-PeCB	U	1.83	pg/g	1.83
52663-60-2	84-PeCB	U	1.83	pg/g	1.83
65510-45-4	85-PeCB	CU	5.49	pg/g	5.49
55312-69-1	86-PeCB	CU	11	pg/g	11.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.66	pg/g	3.66
73575-57-2	89-PeCB	U	1.83	pg/g	1.83
68194-07-0	90-PeCB	CU	5.49	pg/g	5.49
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.83	pg/g	1.83
73575-56-1	93-PeCB	CU	3.66	pg/g	3.66
73575-55-0	94-PeCB	U	1.83	pg/g	1.83
38379-99-6	95-PeCB	U	1.83	pg/g	1.83
73575-54-9	96-PeCB	U	1.83	pg/g	1.83

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**Q** Quantitative Interference; value is estimated  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796011  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-06-S1  
**Batch ID:** 32979  
**Run Date:** 10/14/2016 08:32  
**Data File:** c13oct16a\_2-7  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/10/2016 10:00  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.63 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 13.5  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.66	pg/g	3.66
38380-01-7	99-PeCB	U	1.83	pg/g	1.83
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.83	pg/g	1.83
56558-16-8	104-PeCB	U	1.83	pg/g	1.83
32598-14-4	105-PeCB	U	1.83	pg/g	1.83
70424-69-0	106-PeCB	U	1.83	pg/g	1.83
70424-68-9	107-PeCB	U	1.83	pg/g	1.83
70362-41-3	108-PeCB	CU	3.66	pg/g	3.66
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.66	pg/g	3.66
39635-32-0	111-PeCB	U	1.83	pg/g	1.83
74472-36-9	112-PeCB	U	1.83	pg/g	1.83
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.83	pg/g	1.83
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.83	pg/g	1.83
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.83	pg/g	1.83
56558-18-0	121-PeCB	U	1.83	pg/g	1.83
76842-07-4	122-PeCB	U	1.83	pg/g	1.83
65510-44-3	123-PeCB	U	1.83	pg/g	1.83
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.83	pg/g	1.83
39635-33-1	127-PeCB	U	1.83	pg/g	1.83
38380-07-3	128-HxCB	CU	3.66	pg/g	3.66

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796011	<b>Date Collected:</b> 09/10/2016 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.5
<b>Client ID:</b> VC-A-06-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 08:32	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.63 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.49	pg/g	5.49
52663-66-8	130-HxCB	U	1.83	pg/g	1.83
61798-70-7	131-HxCB	U	1.83	pg/g	1.83
38380-05-1	132-HxCB	U	1.83	pg/g	1.83
35694-04-3	133-HxCB	U	1.83	pg/g	1.83
52704-70-8	134-HxCB	U	1.83	pg/g	1.83
52744-13-5	135-HxCB	CU	3.66	pg/g	3.66
38411-22-2	136-HxCB	U	1.83	pg/g	1.83
35694-06-5	137-HxCB	U	1.83	pg/g	1.83
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.66	pg/g	3.66
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.83	pg/g	1.83
41411-61-4	142-HxCB	U	1.83	pg/g	1.83
68194-15-0	143-HxCB	U	1.83	pg/g	1.83
68194-14-9	144-HxCB	U	1.83	pg/g	1.83
74472-40-5	145-HxCB	U	1.83	pg/g	1.83
51908-16-8	146-HxCB	U	1.83	pg/g	1.83
68194-13-8	147-HxCB	CU	3.66	pg/g	3.66
74472-41-6	148-HxCB	U	1.83	pg/g	1.83
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.83	pg/g	1.83
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.83	pg/g	1.83
35065-27-1	153-HxCB	CU	3.66	pg/g	3.66
60145-22-4	154-HxCB	U	1.83	pg/g	1.83
33979-03-2	155-HxCB	U	1.83	pg/g	1.83
38380-08-4	156-HxCB	CU	3.66	pg/g	3.66
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.83	pg/g	1.83
39635-35-3	159-HxCB	U	1.83	pg/g	1.83
41411-62-5	160-HxCB	U	1.83	pg/g	1.83

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796011	<b>Date Collected:</b> 09/10/2016 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.5
<b>Client ID:</b> VC-A-06-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 08:32	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.63 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.83	pg/g	1.83
39635-34-2	162-HxCB	U	1.83	pg/g	1.83
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.83	pg/g	1.83
74472-46-1	165-HxCB	U	1.83	pg/g	1.83
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.83	pg/g	1.83
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.83	pg/g	1.83
35065-30-6	170-HpCB	U	1.83	pg/g	1.83
52663-71-5	171-HpCB	CU	3.66	pg/g	3.66
52663-74-8	172-HpCB	U	1.83	pg/g	1.83
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.83	pg/g	1.83
40186-70-7	175-HpCB	U	1.83	pg/g	1.83
52663-65-7	176-HpCB	U	1.83	pg/g	1.83
52663-70-4	177-HpCB	U	1.83	pg/g	1.83
52663-67-9	178-HpCB	U	1.83	pg/g	1.83
52663-64-6	179-HpCB	U	1.83	pg/g	1.83
35065-29-3	180-HpCB	CU	3.66	pg/g	3.66
74472-47-2	181-HpCB	U	1.83	pg/g	1.83
60145-23-5	182-HpCB	U	1.83	pg/g	1.83
52663-69-1	183-HpCB	CU	3.66	pg/g	3.66
74472-48-3	184-HpCB	U	1.83	pg/g	1.83
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.83	pg/g	1.83
52663-68-0	187-HpCB	U	1.83	pg/g	1.83
74487-85-7	188-HpCB	U	1.83	pg/g	1.83
39635-31-9	189-HpCB	U	1.83	pg/g	1.83
41411-64-7	190-HpCB	U	1.83	pg/g	1.83
74472-50-7	191-HpCB	U	1.83	pg/g	1.83
74472-51-8	192-HpCB	U	1.83	pg/g	1.83

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796011	<b>Date Collected:</b> 09/10/2016 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.5
<b>Client ID:</b> VC-A-06-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 08:32	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.63 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.83	pg/g	1.83
52663-78-2	195-OcCB	U	1.83	pg/g	1.83
42740-50-1	196-OcCB	U	1.83	pg/g	1.83
33091-17-7	197-OcCB	CU	3.66	pg/g	3.66
68194-17-2	198-OcCB	CU	3.66	pg/g	3.66
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.83	pg/g	1.83
2136-99-4	202-OcCB	U	1.83	pg/g	1.83
52663-76-0	203-OcCB	U	1.83	pg/g	1.83
74472-52-9	204-OcCB	U	1.83	pg/g	1.83
74472-53-0	205-OcCB	U	1.83	pg/g	1.83
40186-72-9	206-NoCB	U	1.83	pg/g	1.83
52663-79-3	207-NoCB	U	1.83	pg/g	1.83
52663-77-1	208-NoCB	U	1.83	pg/g	1.83
2051-24-3	209-DeCB		1.93	pg/g	1.83
1336-36-3	Total PCB Congeners	B	10.4	pg/g	1.83

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		55.1	183	pg/g	30.1	(15%-150%)
13C-3-MoCB		71.2	183	pg/g	38.9	(15%-150%)
13C-4-DiCB	Q	40.1	183	pg/g	21.9 *	(25%-150%)
13C-15-DiCB		174	183	pg/g	95.2	(25%-150%)
13C-19-TrCB		91.7	183	pg/g	50.1	(25%-150%)
13C-37-TrCB		170	183	pg/g	92.9	(25%-150%)
13C-54-TeCB		64.5	183	pg/g	35.3	(25%-150%)
13C-77-TeCB		215	183	pg/g	118	(25%-150%)
13C-81-TeCB		218	183	pg/g	119	(25%-150%)
13C-104-PeCB		78.8	183	pg/g	43.1	(25%-150%)
13C-105-PeCB		167	183	pg/g	91.2	(25%-150%)
13C-114-PeCB		164	183	pg/g	89.8	(25%-150%)
13C-118-PeCB		168	183	pg/g	91.6	(25%-150%)
13C-123-PeCB		169	183	pg/g	92.5	(25%-150%)
13C-126-PeCB		164	183	pg/g	89.7	(25%-150%)
13C-155-HxCB		92.4	183	pg/g	50.5	(25%-150%)
13C-156-HxCB	C	276	366	pg/g	75.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		146	183	pg/g	79.8	(25%-150%)
13C-169-HxCB		131	183	pg/g	71.7	(25%-150%)
13C-188-HpCB		134	183	pg/g	73.0	(25%-150%)
13C-189-HpCB		148	183	pg/g	81.1	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796011	<b>Date Collected:</b> 09/10/2016 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.5
<b>Client ID:</b> VC-A-06-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 08:32	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.63 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			140	183	pg/g	76.4 (25%-150%)
13C-205-OcCB			149	183	pg/g	81.7 (25%-150%)
13C-206-NoCB			129	183	pg/g	70.7 (25%-150%)
13C-208-NoCB			138	183	pg/g	75.2 (25%-150%)
13C-209-DeCB			120	183	pg/g	65.4 (25%-150%)
13C-111-PeCB			136	183	pg/g	74.1 (30%-135%)
13C-28-TrCB			94.9	183	pg/g	51.9 (30%-135%)
13C-178-HpCB			119	183	pg/g	64.9 (30%-135%)

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796012	<b>Date Collected:</b> 09/13/2016 10:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-06-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/14/2016 09:38	<b>Analyst:</b> MJC	<b>Dilution:</b> 1
<b>Data File:</b> c13oct16a_2-8		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.57 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.82	pg/g	1.82
2051-61-8	2-MoCB	U	1.82	pg/g	1.82
2051-62-9	3-MoCB	U	1.82	pg/g	1.82
13029-08-8	4-DiCB	QU	1.82	pg/g	1.82
16605-91-7	5-DiCB	U	1.82	pg/g	1.82
25569-80-6	6-DiCB	U	1.82	pg/g	1.82
33284-50-3	7-DiCB	U	1.82	pg/g	1.82
34883-43-7	8-DiCB	U	1.82	pg/g	1.82
34883-39-1	9-DiCB	U	1.82	pg/g	1.82
33146-45-1	10-DiCB	U	1.82	pg/g	1.82
2050-67-1	11-DiCB	B	5.12	pg/g	3.65
2974-92-7	12-DiCB	CU	3.65	pg/g	3.65
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.82	pg/g	1.82
2050-68-2	15-DiCB	U	1.82	pg/g	1.82
38444-78-9	16-TrCB	U	1.82	pg/g	1.82
37680-66-3	17-TrCB	U	1.82	pg/g	1.82
37680-65-2	18-TrCB	CU	3.65	pg/g	3.65
38444-73-4	19-TrCB	U	1.82	pg/g	1.82
38444-84-7	20-TrCB	CU	3.65	pg/g	3.65
55702-46-0	21-TrCB	CU	3.65	pg/g	3.65
38444-85-8	22-TrCB	U	1.82	pg/g	1.82
55720-44-0	23-TrCB	U	1.82	pg/g	1.82
55702-45-9	24-TrCB	U	1.82	pg/g	1.82
55712-37-3	25-TrCB	U	1.82	pg/g	1.82
38444-81-4	26-TrCB	CU	3.65	pg/g	3.65
38444-76-7	27-TrCB	U	1.82	pg/g	1.82
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.82	pg/g	1.82
38444-77-8	32-TrCB	U	1.82	pg/g	1.82

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796012	<b>Date Collected:</b> 09/13/2016 10:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-06-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 09:38	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.57 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.82	pg/g	1.82
37680-69-6	35-TrCB	U	1.82	pg/g	1.82
38444-87-0	36-TrCB	U	1.82	pg/g	1.82
38444-90-5	37-TrCB	U	1.82	pg/g	1.82
53555-66-1	38-TrCB	U	1.82	pg/g	1.82
38444-88-1	39-TrCB	U	1.82	pg/g	1.82
38444-93-8	40-TeCB	CU	3.65	pg/g	3.65
52663-59-9	41-TeCB	U	1.82	pg/g	1.82
36559-22-5	42-TeCB	U	1.82	pg/g	1.82
70362-46-8	43-TeCB	U	1.82	pg/g	1.82
41464-39-5	44-TeCB	CU	5.47	pg/g	5.47
70362-45-7	45-TeCB	CU	3.65	pg/g	3.65
41464-47-5	46-TeCB	U	1.82	pg/g	1.82
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.82	pg/g	1.82
41464-40-8	49-TeCB	CU	3.65	pg/g	3.65
62796-65-0	50-TeCB	CU	3.65	pg/g	3.65
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.82	pg/g	1.82
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.82	pg/g	1.82
74338-24-2	55-TeCB	U	1.82	pg/g	1.82
41464-43-1	56-TeCB	U	1.82	pg/g	1.82
70424-67-8	57-TeCB	U	1.82	pg/g	1.82
41464-49-7	58-TeCB	U	1.82	pg/g	1.82
74472-33-6	59-TeCB	CU	5.47	pg/g	5.47
33025-41-1	60-TeCB	U	1.82	pg/g	1.82
33284-53-6	61-TeCB	CU	7.29	pg/g	7.29
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.82	pg/g	1.82
52663-58-8	64-TeCB	U	1.82	pg/g	1.82

**Comments:**

- B** The target analyte was detected in the associated blank.
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796012  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-06-S2  
**Batch ID:** 32979  
**Run Date:** 10/14/2016 09:38  
**Data File:** c13oct16a\_2-8  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/13/2016 10:15  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.57 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 12.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.82	pg/g	1.82
73575-53-8	67-TeCB	U	1.82	pg/g	1.82
73575-52-7	68-TeCB	U	1.82	pg/g	1.82
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.82	pg/g	1.82
74338-23-1	73-TeCB	U	1.82	pg/g	1.82
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.82	pg/g	1.82
70362-49-1	78-TeCB	U	1.82	pg/g	1.82
41464-48-6	79-TeCB	U	1.82	pg/g	1.82
33284-52-5	80-TeCB	U	1.82	pg/g	1.82
70362-50-4	81-TeCB	U	1.82	pg/g	1.82
52663-62-4	82-PeCB	U	1.82	pg/g	1.82
60145-20-2	83-PeCB	U	1.82	pg/g	1.82
52663-60-2	84-PeCB	U	1.82	pg/g	1.82
65510-45-4	85-PeCB	CU	5.47	pg/g	5.47
55312-69-1	86-PeCB	CU	10.9	pg/g	10.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.65	pg/g	3.65
73575-57-2	89-PeCB	U	1.82	pg/g	1.82
68194-07-0	90-PeCB	CU	5.47	pg/g	5.47
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.82	pg/g	1.82
73575-56-1	93-PeCB	CU	3.65	pg/g	3.65
73575-55-0	94-PeCB	U	1.82	pg/g	1.82
38379-99-6	95-PeCB	U	1.82	pg/g	1.82
73575-54-9	96-PeCB	U	1.82	pg/g	1.82

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**PCB Congeners**  
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**Sample Summary**

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**SDG Number:** L1629122  
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**Data File:** c13oct16a\_2-8  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/13/2016 10:15  
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**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.57 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 12.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.65	pg/g	3.65
38380-01-7	99-PeCB	U	1.82	pg/g	1.82
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.82	pg/g	1.82
56558-16-8	104-PeCB	U	1.82	pg/g	1.82
32598-14-4	105-PeCB	U	1.82	pg/g	1.82
70424-69-0	106-PeCB	U	1.82	pg/g	1.82
70424-68-9	107-PeCB	U	1.82	pg/g	1.82
70362-41-3	108-PeCB	CU	3.65	pg/g	3.65
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.65	pg/g	3.65
39635-32-0	111-PeCB	U	1.82	pg/g	1.82
74472-36-9	112-PeCB	U	1.82	pg/g	1.82
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.82	pg/g	1.82
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.82	pg/g	1.82
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.82	pg/g	1.82
56558-18-0	121-PeCB	U	1.82	pg/g	1.82
76842-07-4	122-PeCB	U	1.82	pg/g	1.82
65510-44-3	123-PeCB	U	1.82	pg/g	1.82
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.82	pg/g	1.82
39635-33-1	127-PeCB	U	1.82	pg/g	1.82
38380-07-3	128-HxCB	CU	3.65	pg/g	3.65

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 9796012  
**Client Sample:** 1613B Soil/1668A Soil  
**Client ID:** VC-A-06-S2  
**Batch ID:** 32979  
**Run Date:** 10/14/2016 09:38  
**Data File:** c13oct16a\_2-8  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/13/2016 10:15  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.57 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 12.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.47	pg/g	5.47
52663-66-8	130-HxCB	U	1.82	pg/g	1.82
61798-70-7	131-HxCB	U	1.82	pg/g	1.82
38380-05-1	132-HxCB	U	1.82	pg/g	1.82
35694-04-3	133-HxCB	U	1.82	pg/g	1.82
52704-70-8	134-HxCB	U	1.82	pg/g	1.82
52744-13-5	135-HxCB	CU	3.65	pg/g	3.65
38411-22-2	136-HxCB	U	1.82	pg/g	1.82
35694-06-5	137-HxCB	U	1.82	pg/g	1.82
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.65	pg/g	3.65
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.82	pg/g	1.82
41411-61-4	142-HxCB	U	1.82	pg/g	1.82
68194-15-0	143-HxCB	U	1.82	pg/g	1.82
68194-14-9	144-HxCB	U	1.82	pg/g	1.82
74472-40-5	145-HxCB	U	1.82	pg/g	1.82
51908-16-8	146-HxCB	U	1.82	pg/g	1.82
68194-13-8	147-HxCB	CU	3.65	pg/g	3.65
74472-41-6	148-HxCB	U	1.82	pg/g	1.82
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.82	pg/g	1.82
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.82	pg/g	1.82
35065-27-1	153-HxCB	CU	3.65	pg/g	3.65
60145-22-4	154-HxCB	U	1.82	pg/g	1.82
33979-03-2	155-HxCB	U	1.82	pg/g	1.82
38380-08-4	156-HxCB	CU	3.65	pg/g	3.65
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.82	pg/g	1.82
39635-35-3	159-HxCB	U	1.82	pg/g	1.82
41411-62-5	160-HxCB	U	1.82	pg/g	1.82

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796012	<b>Date Collected:</b> 09/13/2016 10:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-06-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 09:38	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.57 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.82	pg/g	1.82
39635-34-2	162-HxCB	U	1.82	pg/g	1.82
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.82	pg/g	1.82
74472-46-1	165-HxCB	U	1.82	pg/g	1.82
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.82	pg/g	1.82
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.82	pg/g	1.82
35065-30-6	170-HpCB	U	1.82	pg/g	1.82
52663-71-5	171-HpCB	CU	3.65	pg/g	3.65
52663-74-8	172-HpCB	U	1.82	pg/g	1.82
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.82	pg/g	1.82
40186-70-7	175-HpCB	U	1.82	pg/g	1.82
52663-65-7	176-HpCB	U	1.82	pg/g	1.82
52663-70-4	177-HpCB	U	1.82	pg/g	1.82
52663-67-9	178-HpCB	U	1.82	pg/g	1.82
52663-64-6	179-HpCB	U	1.82	pg/g	1.82
35065-29-3	180-HpCB	CU	3.65	pg/g	3.65
74472-47-2	181-HpCB	U	1.82	pg/g	1.82
60145-23-5	182-HpCB	U	1.82	pg/g	1.82
52663-69-1	183-HpCB	CU	3.65	pg/g	3.65
74472-48-3	184-HpCB	U	1.82	pg/g	1.82
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.82	pg/g	1.82
52663-68-0	187-HpCB	U	1.82	pg/g	1.82
74487-85-7	188-HpCB	U	1.82	pg/g	1.82
39635-31-9	189-HpCB	U	1.82	pg/g	1.82
41411-64-7	190-HpCB	U	1.82	pg/g	1.82
74472-50-7	191-HpCB	U	1.82	pg/g	1.82
74472-51-8	192-HpCB	U	1.82	pg/g	1.82

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**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796012	<b>Date Collected:</b> 09/13/2016 10:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-06-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 09:38	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.57 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.82	pg/g	1.82
52663-78-2	195-OcCB	U	1.82	pg/g	1.82
42740-50-1	196-OcCB	U	1.82	pg/g	1.82
33091-17-7	197-OcCB	CU	3.65	pg/g	3.65
68194-17-2	198-OcCB	CU	3.65	pg/g	3.65
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.82	pg/g	1.82
2136-99-4	202-OcCB	U	1.82	pg/g	1.82
52663-76-0	203-OcCB	U	1.82	pg/g	1.82
74472-52-9	204-OcCB	U	1.82	pg/g	1.82
74472-53-0	205-OcCB	U	1.82	pg/g	1.82
40186-72-9	206-NoCB	U	1.82	pg/g	1.82
52663-79-3	207-NoCB	U	1.82	pg/g	1.82
52663-77-1	208-NoCB	U	1.82	pg/g	1.82
2051-24-3	209-DeCB	U	1.82	pg/g	1.82
1336-36-3	Total PCB Congeners	B	5.12	pg/g	1.82

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		57.5	182	pg/g	31.5	(15%-150%)
13C-3-MoCB		75.1	182	pg/g	41.2	(15%-150%)
13C-4-DiCB	Q	38.5	182	pg/g	21.1 *	(25%-150%)
13C-15-DiCB		194	182	pg/g	107	(25%-150%)
13C-19-TrCB		97.5	182	pg/g	53.4	(25%-150%)
13C-37-TrCB		188	182	pg/g	103	(25%-150%)
13C-54-TeCB		65.3	182	pg/g	35.8	(25%-150%)
13C-77-TeCB		245	182	pg/g	134	(25%-150%)
13C-81-TeCB		248	182	pg/g	136	(25%-150%)
13C-104-PeCB		83.6	182	pg/g	45.9	(25%-150%)
13C-105-PeCB		187	182	pg/g	103	(25%-150%)
13C-114-PeCB		184	182	pg/g	101	(25%-150%)
13C-118-PeCB		189	182	pg/g	104	(25%-150%)
13C-123-PeCB		190	182	pg/g	104	(25%-150%)
13C-126-PeCB		184	182	pg/g	101	(25%-150%)
13C-155-HxCB		98.9	182	pg/g	54.2	(25%-150%)
13C-156-HxCB	C	312	365	pg/g	85.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		167	182	pg/g	91.4	(25%-150%)
13C-169-HxCB		153	182	pg/g	83.7	(25%-150%)
13C-188-HpCB		139	182	pg/g	76.4	(25%-150%)
13C-189-HpCB		167	182	pg/g	91.4	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796012	<b>Date Collected:</b> 09/13/2016 10:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil/1668A Soil	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 12.8
<b>Client ID:</b> VC-A-06-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/14/2016 09:38	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a_2-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.57 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			149	182	pg/g	81.6 (25%-150%)
13C-205-OcCB			166	182	pg/g	90.8 (25%-150%)
13C-206-NoCB			144	182	pg/g	78.8 (25%-150%)
13C-208-NoCB			153	182	pg/g	83.9 (25%-150%)
13C-209-DeCB			129	182	pg/g	70.6 (25%-150%)
13C-111-PeCB			183	182	pg/g	100 (30%-135%)
13C-28-TrCB			121	182	pg/g	66.1 (30%-135%)
13C-178-HpCB			161	182	pg/g	88.3 (30%-135%)

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# Quality Control Summary

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017042	LCS for batch 32977	13C-1-MoCB		40.0	(15%-140%)
		13C-3-MoCB		47.3	(15%-140%)
		13C-4-DiCB		37.3	(30%-140%)
		13C-15-DiCB		88.8	(30%-140%)
		13C-19-TrCB		65.4	(30%-140%)
		13C-37-TrCB		80.5	(30%-140%)
		13C-54-TeCB		50.1	(30%-140%)
		13C-77-TeCB		101	(30%-140%)
		13C-81-TeCB		101	(30%-140%)
		13C-104-PeCB		53.1	(30%-140%)
		13C-105-PeCB		79.5	(30%-140%)
		13C-114-PeCB		78.4	(30%-140%)
		13C-118-PeCB		80.0	(30%-140%)
		13C-123-PeCB		80.6	(30%-140%)
		13C-126-PeCB		83.9	(30%-140%)
		13C-155-HxCB		56.6	(30%-140%)
		13C-156-HxCB		68.9	(30%-140%)
		13C-157-HxCB			
		13C-167-HxCB			
		13C-169-HxCB			
		13C-188-HpCB			
		13C-189-HpCB			
		13C-202-OcCB			
		13C-205-OcCB			
		13C-206-NoCB			
		13C-208-NoCB			
		13C-209-DeCB			
		13C-111-PeCB			
		13C-28-TrCB			
		13C-178-HpCB			
12017043	LCSD for batch 32977	13C-1-MoCB		43.0	(15%-140%)
		13C-3-MoCB		53.2	(15%-140%)
		13C-4-DiCB		45.4	(30%-140%)
		13C-15-DiCB		103	(30%-140%)
		13C-19-TrCB		80.1	(30%-140%)
		13C-37-TrCB		91.2	(30%-140%)
		13C-54-TeCB		61.5	(30%-140%)
		13C-77-TeCB		116	(30%-140%)
		13C-81-TeCB		117	(30%-140%)
		13C-104-PeCB		65.0	(30%-140%)
		13C-105-PeCB		96.7	(30%-140%)
		13C-114-PeCB		94.8	(30%-140%)
		13C-118-PeCB		96.6	(30%-140%)
		13C-123-PeCB		97.4	(30%-140%)
		13C-126-PeCB		100	(30%-140%)
		13C-155-HxCB		66.5	(30%-140%)
		13C-156-HxCB		82.2	(30%-140%)
		13C-157-HxCB			
		13C-167-HxCB			
		13C-169-HxCB			
		13C-188-HpCB			
		13C-189-HpCB			



**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017043	LCSD for batch 32977	13C-202-OcCB		92.0	(30%-140%)
		13C-205-OcCB		98.2	(30%-140%)
		13C-206-NoCB		96.7	(30%-140%)
		13C-208-NoCB		93.4	(30%-140%)
		13C-209-DeCB		101	(30%-140%)
		13C-111-PeCB		95.0	(40%-125%)
		13C-28-TrCB		73.2	(40%-125%)
		13C-178-HpCB		95.3	(40%-125%)
12017041	MB for batch 32977	13C-1-MoCB		36.1	(15%-150%)
		13C-3-MoCB		46.8	(15%-150%)
		13C-4-DiCB		38.4	(25%-150%)
		13C-15-DiCB		92.1	(25%-150%)
		13C-19-TrCB		71.3	(25%-150%)
		13C-37-TrCB		85.1	(25%-150%)
		13C-54-TeCB		58.9	(25%-150%)
		13C-77-TeCB		109	(25%-150%)
		13C-81-TeCB		109	(25%-150%)
		13C-104-PeCB		60.5	(25%-150%)
		13C-105-PeCB		89.4	(25%-150%)
		13C-114-PeCB		87.8	(25%-150%)
		13C-118-PeCB		89.9	(25%-150%)
		13C-123-PeCB		90.6	(25%-150%)
		13C-126-PeCB		92.0	(25%-150%)
		13C-155-HxCB		63.7	(25%-150%)
		13C-156-HxCB	C C156L	77.3	(25%-150%)
		13C-157-HxCB			
		13C-167-HxCB		80.5	(25%-150%)
		13C-169-HxCB		79.2	(25%-150%)
		13C-188-HpCB		79.7	(25%-150%)
		13C-189-HpCB		80.9	(25%-150%)
		13C-202-OcCB		88.1	(25%-150%)
13C-205-OcCB		92.4	(25%-150%)		
13C-206-NoCB		89.4	(25%-150%)		
13C-208-NoCB		88.8	(25%-150%)		
13C-209-DeCB		96.4	(25%-150%)		
13C-111-PeCB		98.3	(30%-135%)		
13C-28-TrCB		77.2	(30%-135%)		
13C-178-HpCB		99.2	(30%-135%)		
9796001	VC-A-01	13C-1-MoCB		30.1	(15%-150%)
		13C-3-MoCB		38.9	(15%-150%)
		13C-4-DiCB	Q	21.4 *	(25%-150%)
		13C-15-DiCB		88.9	(25%-150%)
		13C-19-TrCB		48.8	(25%-150%)
		13C-37-TrCB		86.0	(25%-150%)
		13C-54-TeCB		34.3	(25%-150%)
		13C-77-TeCB		108	(25%-150%)
		13C-81-TeCB		110	(25%-150%)
		13C-104-PeCB		39.3	(25%-150%)
		13C-105-PeCB		84.5	(25%-150%)
		13C-114-PeCB		82.8	(25%-150%)
		13C-118-PeCB		84.6	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796001	VC-A-01	13C-123-PeCB		85.3	(25%-150%)
		13C-126-PeCB		83.3	(25%-150%)
		13C-155-HxCB		47.1	(25%-150%)
		13C-156-HxCB	C	70.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		74.5	(25%-150%)
		13C-169-HxCB		68.6	(25%-150%)
		13C-188-HpCB		67.0	(25%-150%)
		13C-189-HpCB		75.4	(25%-150%)
		13C-202-OcCB		70.9	(25%-150%)
		13C-205-OcCB		75.6	(25%-150%)
		13C-206-NoCB		55.8	(25%-150%)
		13C-208-NoCB		70.5	(25%-150%)
		13C-209-DeCB		63.1	(25%-150%)
		13C-28-TrCB		58.2	(30%-135%)
		13C-111-PeCB		80.1	(30%-135%)
		13C-178-HpCB		72.9	(30%-135%)
9796002	VC-A-02	13C-1-MoCB		26.7	(15%-150%)
		13C-3-MoCB		33.2	(15%-150%)
		13C-4-DiCB	Q	19.3 *	(25%-150%)
		13C-15-DiCB		103	(25%-150%)
		13C-19-TrCB		48.2	(25%-150%)
		13C-37-TrCB		91.7	(25%-150%)
		13C-54-TeCB		30.6	(25%-150%)
		13C-77-TeCB		129	(25%-150%)
		13C-81-TeCB		129	(25%-150%)
		13C-104-PeCB		35.6	(25%-150%)
		13C-105-PeCB		89.9	(25%-150%)
		13C-114-PeCB		88.3	(25%-150%)
		13C-118-PeCB		90.2	(25%-150%)
		13C-123-PeCB		91.5	(25%-150%)
		13C-126-PeCB		91.2	(25%-150%)
		13C-155-HxCB		44.8	(25%-150%)
		13C-156-HxCB	C	73.3	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		77.2	(25%-150%)
		13C-169-HxCB		73.3	(25%-150%)
		13C-188-HpCB		62.5	(25%-150%)
		13C-189-HpCB		77.9	(25%-150%)
		13C-202-OcCB		67.5	(25%-150%)
		13C-205-OcCB		76.8	(25%-150%)
13C-206-NoCB		61.0	(25%-150%)		
13C-208-NoCB		68.9	(25%-150%)		
13C-209-DeCB		55.8	(25%-150%)		
13C-28-TrCB		54.7	(30%-135%)		
13C-111-PeCB		83.1	(30%-135%)		
13C-178-HpCB		71.1	(30%-135%)		
9796003	VC-A-03	13C-1-MoCB		28.3	(15%-150%)
		13C-3-MoCB		37.6	(15%-150%)
		13C-4-DiCB	Q	19.4 *	(25%-150%)
		13C-15-DiCB		92.8	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796003	VC-A-03	13C-19-TrCB		47.7	(25%-150%)
		13C-37-TrCB		92.4	(25%-150%)
		13C-54-TeCB		34.5	(25%-150%)
		13C-77-TeCB		122	(25%-150%)
		13C-81-TeCB		122	(25%-150%)
		13C-104-PeCB		38.8	(25%-150%)
		13C-105-PeCB		92.0	(25%-150%)
		13C-114-PeCB		89.8	(25%-150%)
		13C-118-PeCB		93.4	(25%-150%)
		13C-123-PeCB		93.3	(25%-150%)
		13C-126-PeCB		93.6	(25%-150%)
		13C-155-HxCB		47.2	(25%-150%)
		13C-156-HxCB	C C156L	76.1	(25%-150%)
		13C-157-HxCB		80.4	(25%-150%)
		13C-167-HxCB		77.1	(25%-150%)
		13C-169-HxCB		64.7	(25%-150%)
		13C-188-HpCB		80.9	(25%-150%)
		13C-189-HpCB		70.3	(25%-150%)
		13C-202-OcCB		79.6	(25%-150%)
		13C-205-OcCB		68.1	(25%-150%)
		13C-206-NoCB		71.0	(25%-150%)
		13C-208-NoCB		59.6	(25%-150%)
		13C-209-DeCB		54.2	(30%-135%)
		13C-28-TrCB		74.0	(30%-135%)
13C-111-PeCB		64.4	(30%-135%)		
13C-178-HpCB					
9796004	VC-A-03 DUP	13C-1-MoCB		27.7	(15%-150%)
		13C-3-MoCB		35.8	(15%-150%)
		13C-4-DiCB	Q	19.9 *	(25%-150%)
		13C-15-DiCB		93.4	(25%-150%)
		13C-19-TrCB		46.9	(25%-150%)
		13C-37-TrCB		101	(25%-150%)
		13C-54-TeCB		34.3	(25%-150%)
		13C-77-TeCB		133	(25%-150%)
		13C-81-TeCB		132	(25%-150%)
		13C-104-PeCB		41.4	(25%-150%)
		13C-105-PeCB		99.1	(25%-150%)
		13C-114-PeCB		97.0	(25%-150%)
		13C-118-PeCB		99.8	(25%-150%)
		13C-123-PeCB		100	(25%-150%)
		13C-126-PeCB		102	(25%-150%)
		13C-155-HxCB		50.6	(25%-150%)
		13C-156-HxCB	C C156L	83.0	(25%-150%)
		13C-157-HxCB		87.6	(25%-150%)
		13C-167-HxCB		85.1	(25%-150%)
		13C-169-HxCB		67.9	(25%-150%)
		13C-188-HpCB		86.9	(25%-150%)
		13C-189-HpCB		73.5	(25%-150%)
		13C-202-OcCB		85.8	(25%-150%)
		13C-205-OcCB		73.4	(25%-150%)
13C-206-NoCB		75.0	(25%-150%)		
13C-208-NoCB					

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796004	VC-A-03 DUP	13C-209-DeCB		67.4	(25%-150%)
		13C-28-TrCB		61.6	(30%-135%)
		13C-111-PeCB		88.3	(30%-135%)
		13C-178-HpCB		75.8	(30%-135%)
9796005	VC-A-03 DUP MS	13C-1-MoCB		27.3	(15%-150%)
		13C-3-MoCB		37.3	(15%-150%)
		13C-4-DiCB	Q	18.9 *	(25%-150%)
		13C-15-DiCB		82.6	(25%-150%)
		13C-19-TrCB		45.3	(25%-150%)
		13C-37-TrCB		91.0	(25%-150%)
		13C-54-TeCB		34.3	(25%-150%)
		13C-77-TeCB		118	(25%-150%)
		13C-81-TeCB		118	(25%-150%)
		13C-104-PeCB		40.4	(25%-150%)
		13C-105-PeCB		92.1	(25%-150%)
		13C-114-PeCB		90.2	(25%-150%)
		13C-118-PeCB		92.5	(25%-150%)
		13C-123-PeCB		93.3	(25%-150%)
		13C-126-PeCB		92.7	(25%-150%)
		13C-155-HxCB		47.2	(25%-150%)
		13C-156-HxCB	C	75.8	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		80.7	(25%-150%)
		13C-169-HxCB		76.8	(25%-150%)
		13C-188-HpCB		63.8	(25%-150%)
		13C-189-HpCB		80.5	(25%-150%)
		13C-202-OcCB		68.4	(25%-150%)
		13C-205-OcCB		78.8	(25%-150%)
13C-206-NoCB		67.6	(25%-150%)		
13C-208-NoCB		69.9	(25%-150%)		
13C-209-DeCB		62.0	(25%-150%)		
13C-28-TrCB		56.6	(30%-135%)		
13C-111-PeCB		80.3	(30%-135%)		
13C-178-HpCB		69.5	(30%-135%)		
9796006	VC-A-03 DUP MSD	13C-1-MoCB		28.9	(15%-150%)
		13C-3-MoCB		34.3	(15%-150%)
		13C-4-DiCB	Q	18.2 *	(25%-150%)
		13C-15-DiCB		79.7	(25%-150%)
		13C-19-TrCB		41.8	(25%-150%)
		13C-37-TrCB		79.1	(25%-150%)
		13C-54-TeCB		28.6	(25%-150%)
		13C-77-TeCB		103	(25%-150%)
		13C-81-TeCB		102	(25%-150%)
		13C-104-PeCB		34.7	(25%-150%)
		13C-105-PeCB		79.7	(25%-150%)
		13C-114-PeCB		77.6	(25%-150%)
		13C-118-PeCB		79.5	(25%-150%)
		13C-123-PeCB		80.2	(25%-150%)
		13C-126-PeCB		82.5	(25%-150%)
		13C-155-HxCB		40.9	(25%-150%)
13C-156-HxCB	C	67.6	(25%-150%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796006	VC-A-03 DUP MSD	13C-157-HxCB	C156L		
		13C-167-HxCB		70.7	(25%-150%)
		13C-169-HxCB		69.0	(25%-150%)
		13C-188-HpCB		55.4	(25%-150%)
		13C-189-HpCB		71.1	(25%-150%)
		13C-202-OcCB		59.7	(25%-150%)
		13C-205-OcCB		70.5	(25%-150%)
		13C-206-NoCB		60.0	(25%-150%)
		13C-208-NoCB		61.4	(25%-150%)
		13C-209-DeCB		55.3	(25%-150%)
		13C-28-TrCB		52.1	(30%-135%)
		13C-111-PeCB		73.7	(30%-135%)
		13C-178-HpCB		65.6	(30%-135%)
		9796007	VC-A-04-S1	13C-1-MoCB	
13C-3-MoCB				36.1	(15%-150%)
13C-4-DiCB	Q			19.3 *	(25%-150%)
13C-15-DiCB				83.1	(25%-150%)
13C-19-TrCB				44.3	(25%-150%)
13C-37-TrCB				84.9	(25%-150%)
13C-54-TeCB				30.3	(25%-150%)
13C-77-TeCB				115	(25%-150%)
13C-81-TeCB				116	(25%-150%)
13C-104-PeCB				36.8	(25%-150%)
13C-105-PeCB				84.3	(25%-150%)
13C-114-PeCB				82.3	(25%-150%)
13C-118-PeCB				84.5	(25%-150%)
13C-123-PeCB				85.5	(25%-150%)
13C-126-PeCB				83.6	(25%-150%)
13C-155-HxCB				45.9	(25%-150%)
13C-156-HxCB	C			70.3	(25%-150%)
13C-157-HxCB	C156L				
13C-167-HxCB				75.1	(25%-150%)
13C-169-HxCB				69.7	(25%-150%)
13C-188-HpCB				67.2	(25%-150%)
13C-189-HpCB				76.3	(25%-150%)
13C-202-OcCB				71.3	(25%-150%)
13C-205-OcCB				75.7	(25%-150%)
13C-206-NoCB				57.9	(25%-150%)
13C-208-NoCB				69.9	(25%-150%)
13C-209-DeCB				61.8	(25%-150%)
13C-28-TrCB				55.5	(30%-135%)
13C-111-PeCB		77.6	(30%-135%)		
13C-178-HpCB		68.5	(30%-135%)		
9796008	VC-A-04-S2	13C-1-MoCB		30.4	(15%-150%)
		13C-3-MoCB		41.0	(15%-150%)
		13C-4-DiCB	Q	20.0 *	(25%-150%)
		13C-15-DiCB		90.9	(25%-150%)
		13C-19-TrCB		49.8	(25%-150%)
		13C-37-TrCB		89.6	(25%-150%)
		13C-54-TeCB		36.5	(25%-150%)
		13C-77-TeCB		124	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
9796008	VC-A-04-S2	13C-81-TeCB		124	(25%-150%)	
		13C-104-PeCB		38.8	(25%-150%)	
		13C-105-PeCB		90.0	(25%-150%)	
		13C-114-PeCB		88.5	(25%-150%)	
		13C-118-PeCB		91.1	(25%-150%)	
		13C-123-PeCB		91.6	(25%-150%)	
		13C-126-PeCB		91.1	(25%-150%)	
		13C-155-HxCB		46.9	(25%-150%)	
		13C-156-HxCB	C	74.2	(25%-150%)	
		13C-157-HxCB	C156L			
		13C-167-HxCB		77.9	(25%-150%)	
		13C-169-HxCB		72.6	(25%-150%)	
		13C-188-HpCB		68.5	(25%-150%)	
		13C-189-HpCB		77.9	(25%-150%)	
		13C-202-OcCB		72.7	(25%-150%)	
		13C-205-OcCB		77.6	(25%-150%)	
		13C-206-NoCB		64.6	(25%-150%)	
		13C-208-NoCB		71.2	(25%-150%)	
		13C-209-DeCB		58.4	(25%-150%)	
		13C-28-TrCB		55.1	(30%-135%)	
13C-111-PeCB		73.7	(30%-135%)			
13C-178-HpCB		64.0	(30%-135%)			
9796009	VC-A-04-S3	13C-1-MoCB		15.6	(15%-150%)	
		13C-3-MoCB		26.5	(15%-150%)	
		13C-4-DiCB	Q	12.9 *	(25%-150%)	
		13C-15-DiCB		75.6	(25%-150%)	
		13C-19-TrCB		32.3	(25%-150%)	
		13C-37-TrCB		77.3	(25%-150%)	
		13C-54-TeCB		23.9 *	(25%-150%)	
		13C-77-TeCB		111	(25%-150%)	
		13C-81-TeCB		111	(25%-150%)	
		13C-104-PeCB		29.5	(25%-150%)	
		13C-105-PeCB		83.6	(25%-150%)	
		13C-114-PeCB		81.3	(25%-150%)	
		13C-118-PeCB		83.0	(25%-150%)	
		13C-123-PeCB		83.4	(25%-150%)	
		13C-126-PeCB		83.5	(25%-150%)	
		13C-155-HxCB		39.2	(25%-150%)	
		13C-156-HxCB	C	69.5	(25%-150%)	
		13C-157-HxCB	C156L			
		13C-167-HxCB		72.8	(25%-150%)	
		13C-169-HxCB		66.8	(25%-150%)	
13C-188-HpCB		62.7	(25%-150%)			
13C-189-HpCB		74.6	(25%-150%)			
13C-202-OcCB		67.2	(25%-150%)			
13C-205-OcCB		75.1	(25%-150%)			
13C-206-NoCB		64.8	(25%-150%)			
13C-208-NoCB		67.8	(25%-150%)			
13C-209-DeCB		57.5	(25%-150%)			
13C-28-TrCB		58.5	(30%-135%)			
13C-111-PeCB		79.1	(30%-135%)			
13C-178-HpCB		69.9	(30%-135%)			

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796010	VC-A-05	13C-1-MoCB		24.8	(15%-150%)
		13C-3-MoCB		33.2	(15%-150%)
		13C-4-DiCB	Q	16.5 *	(25%-150%)
		13C-15-DiCB		88.4	(25%-150%)
		13C-19-TrCB		42.6	(25%-150%)
		13C-37-TrCB		93.8	(25%-150%)
		13C-54-TeCB		30.4	(25%-150%)
		13C-77-TeCB		127	(25%-150%)
		13C-81-TeCB		125	(25%-150%)
		13C-104-PeCB		39.3	(25%-150%)
		13C-105-PeCB		95.6	(25%-150%)
		13C-114-PeCB		93.3	(25%-150%)
		13C-118-PeCB		96.3	(25%-150%)
		13C-123-PeCB		96.4	(25%-150%)
		13C-126-PeCB		95.9	(25%-150%)
		13C-155-HxCB		50.5	(25%-150%)
		13C-156-HxCB	C	81.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		85.8	(25%-150%)
		13C-169-HxCB		80.4	(25%-150%)
		13C-188-HpCB		72.5	(25%-150%)
		13C-189-HpCB		88.1	(25%-150%)
		13C-202-OcCB		79.8	(25%-150%)
		13C-205-OcCB		87.4	(25%-150%)
		13C-206-NoCB		74.2	(25%-150%)
		13C-208-NoCB		79.4	(25%-150%)
		13C-209-DeCB		68.2	(25%-150%)
		13C-28-TrCB		59.7	(30%-135%)
		13C-111-PeCB		85.7	(30%-135%)
		13C-178-HpCB		76.3	(30%-135%)
9796011	VC-A-06-S1	13C-1-MoCB		30.1	(15%-150%)
		13C-3-MoCB		38.9	(15%-150%)
		13C-4-DiCB	Q	21.9 *	(25%-150%)
		13C-15-DiCB		95.2	(25%-150%)
		13C-19-TrCB		50.1	(25%-150%)
		13C-37-TrCB		92.9	(25%-150%)
		13C-54-TeCB		35.3	(25%-150%)
		13C-77-TeCB		118	(25%-150%)
		13C-81-TeCB		119	(25%-150%)
		13C-104-PeCB		43.1	(25%-150%)
		13C-105-PeCB		91.2	(25%-150%)
		13C-114-PeCB		89.8	(25%-150%)
		13C-118-PeCB		91.6	(25%-150%)
		13C-123-PeCB		92.5	(25%-150%)
		13C-126-PeCB		89.7	(25%-150%)
		13C-155-HxCB		50.5	(25%-150%)
		13C-156-HxCB	C	75.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		79.8	(25%-150%)
		13C-169-HxCB		71.7	(25%-150%)
13C-188-HpCB		73.0	(25%-150%)		
13C-189-HpCB		81.1	(25%-150%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1629122

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9796011	VC-A-06-S1	13C-202-OcCB		76.4	(25%-150%)
		13C-205-OcCB		81.7	(25%-150%)
		13C-206-NoCB		70.7	(25%-150%)
		13C-208-NoCB		75.2	(25%-150%)
		13C-209-DeCB		65.4	(25%-150%)
		13C-28-TrCB		51.9	(30%-135%)
		13C-111-PeCB		74.1	(30%-135%)
		13C-178-HpCB		64.9	(30%-135%)
9796012	VC-A-06-S2	13C-1-MoCB		31.5	(15%-150%)
		13C-3-MoCB		41.2	(15%-150%)
		13C-4-DiCB	Q	21.1 *	(25%-150%)
		13C-15-DiCB		107	(25%-150%)
		13C-19-TrCB		53.4	(25%-150%)
		13C-37-TrCB		103	(25%-150%)
		13C-54-TeCB		35.8	(25%-150%)
		13C-77-TeCB		134	(25%-150%)
		13C-81-TeCB		136	(25%-150%)
		13C-104-PeCB		45.9	(25%-150%)
		13C-105-PeCB		103	(25%-150%)
		13C-114-PeCB		101	(25%-150%)
		13C-118-PeCB		104	(25%-150%)
		13C-123-PeCB		104	(25%-150%)
		13C-126-PeCB		101	(25%-150%)
		13C-155-HxCB		54.2	(25%-150%)
		13C-156-HxCB	C	85.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		91.4	(25%-150%)
		13C-169-HxCB		83.7	(25%-150%)
		13C-188-HpCB		76.4	(25%-150%)
		13C-189-HpCB		91.4	(25%-150%)
		13C-202-OcCB		81.6	(25%-150%)
		13C-205-OcCB		90.8	(25%-150%)
		13C-206-NoCB		78.8	(25%-150%)
		13C-208-NoCB		83.9	(25%-150%)
		13C-209-DeCB		70.6	(25%-150%)
		13C-28-TrCB		66.1	(30%-135%)
13C-111-PeCB		100	(30%-135%)		
13C-178-HpCB		88.3	(30%-135%)		

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted



**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 1 of 2

**SDG Number:** L1629122  
**Client ID:** LCS for batch 32977  
**Lab Sample ID:** 12017042  
**Instrument:** HRP791  
**Analyst:** MJC

**Sample Type:** Laboratory Control Sample  
**Matrix:** SOIL  
**Analysis Date:** 10/11/2016 16:41  
**Prep Batch ID:** 32977  
**Batch ID:** 32979  
**Dilution:** 1

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS 1-MoCB	50.0	52.4	105	50-150
2051-62-9	LCS 3-MoCB	50.0	57.1	114	50-150
13029-08-8	LCS 4-DiCB	50.0	45.6	91.2	50-150
2050-68-2	LCS 15-DiCB	50.0	58.9	118	50-150
38444-73-4	LCS 19-TrCB	50.0	53.6	107	50-150
38444-90-5	LCS 37-TrCB	50.0	50.8	102	50-150
15968-05-5	LCS 54-TeCB	100	106	106	50-150
32598-13-3	LCS 77-TeCB	100	101	101	50-150
70362-50-4	LCS 81-TeCB	100	114	114	50-150
56558-16-8	LCS 104-PeCB	100	112	112	50-150
32598-14-4	LCS 105-PeCB	100	128	128	50-150
74472-37-0	LCS 114-PeCB	100	117	117	50-150
31508-00-6	LCS 118-PeCB	100	107	107	50-150
65510-44-3	LCS 123-PeCB	100	110	110	50-150
57465-28-8	LCS 126-PeCB	100	119	119	50-150
33979-03-2	LCS 155-HxCB	100	109	109	50-150
38380-08-4	LCS 156-HxCB	200	C 240	120	50-150
69782-90-7	LCS 157-HxCB		C156		
52663-72-6	LCS 167-HxCB	100	125	125	50-150
32774-16-6	LCS 169-HxCB	100	113	113	50-150
74487-85-7	LCS 188-HpCB	100	106	106	50-150
39635-31-9	LCS 189-HpCB	100	110	110	50-150
2136-99-4	LCS 202-OcCB	150	154	103	50-150
74472-53-0	LCS 205-OcCB	150	147	98	50-150
40186-72-9	LCS 206-NoCB	150	153	102	50-150
52663-77-1	LCS 208-NoCB	150	160	107	50-150
2051-24-3	LCS 209-DeCB	150	148	99	50-150

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 2 of 2

SDG Number: L1629122

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 32977

Matrix: SOIL

Lab Sample ID: 12017043

Instrument: HRP791

Analysis Date: 10/11/2016 17:47

Dilution: 1

Analyst: MJC

Prep Batch ID: 32977

Batch ID: 32979

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD 1-MoCB	50.0	51.6	103	50-150	1.53	0-20
2051-62-9	LCSD 3-MoCB	50.0	59.0	118	50-150	3.25	0-20
13029-08-8	LCSD 4-DiCB	50.0	41.8	83.6	50-150	8.66	0-20
2050-68-2	LCSD 15-DiCB	50.0	57.4	115	50-150	2.55	0-20
38444-73-4	LCSD 19-TrCB	50.0	49.7	99.5	50-150	7.55	0-20
38444-90-5	LCSD 37-TrCB	50.0	49.7	99.3	50-150	2.34	0-20
15968-05-5	LCSD 54-TeCB	100	103	103	50-150	3.10	0-20
32598-13-3	LCSD 77-TeCB	100	98.4	98.4	50-150	2.37	0-20
70362-50-4	LCSD 81-TeCB	100	111	111	50-150	3.30	0-20
56558-16-8	LCSD 104-PeCB	100	108	108	50-150	4.22	0-20
32598-14-4	LCSD 105-PeCB	100	123	123	50-150	4.18	0-20
74472-37-0	LCSD 114-PeCB	100	112	112	50-150	3.77	0-20
31508-00-6	LCSD 118-PeCB	100	105	105	50-150	2.04	0-20
65510-44-3	LCSD 123-PeCB	100	106	106	50-150	3.77	0-20
57465-28-8	LCSD 126-PeCB	100	116	116	50-150	2.99	0-20
33979-03-2	LCSD 155-HxCB	100	104	104	50-150	4.65	0-20
38380-08-4	LCSD 156-HxCB	200	234	117	50-150	2.65	0-20
69782-90-7	LCSD 157-HxCB		C156				
52663-72-6	LCSD 167-HxCB	100	122	122	50-150	2.54	0-20
32774-16-6	LCSD 169-HxCB	100	110	110	50-150	2.89	0-20
74487-85-7	LCSD 188-HpCB	100	104	104	50-150	1.96	0-20
39635-31-9	LCSD 189-HpCB	100	107	107	50-150	2.42	0-20
2136-99-4	LCSD 202-OcCB	150	150	99.8	50-150	2.78	0-20
74472-53-0	LCSD 205-OcCB	150	142	94.9	50-150	3.18	0-20
40186-72-9	LCSD 206-NoCB	150	148	98.8	50-150	2.99	0-20
52663-77-1	LCSD 208-NoCB	150	157	105	50-150	1.81	0-20
2051-24-3	LCSD 209-DeCB	150	145	96.8	50-150	2.20	0-20

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1629122  
**Client ID:** VC-A-03 DUP MS  
**Lab Sample ID:** 9796005  
**Instrument:** HRP791  
**Analyst:** MJC

**Sample Type:** Matrix Spike  
**Matrix:** SOIL  
**%Moisture:** 13.1  
**Analysis Date:** 10/13/2016 22:24  
**Dilution:** 1  
**Prep Batch ID:** 32977  
**Batch ID:** 32979

CAS No.	Parmname	Amount Added		Spike	Recovery %	Acceptance Limits	
		pg/g		Conc. pg/g			
2051-60-7	MS	1-MoCB	46.7	U	46.7	100	50-150
2051-62-9	MS	3-MoCB	46.7	U	53.5	115	50-150
13029-08-8	MS	4-DiCB	46.7	QU	42.7	91.3	50-150
2050-68-2	MS	15-DiCB	46.7		54.6	113	50-150
38444-73-4	MS	19-TrCB	46.7	U	49.4	106	50-150
38444-90-5	MS	37-TrCB	46.7	U	47.9	103	50-150
15968-05-5	MS	54-TeCB	93.4	U	96.4	103	50-150
32598-13-3	MS	77-TeCB	93.4	U	92.6	99.1	50-150
70362-50-4	MS	81-TeCB	93.4	U	104	112	50-150
56558-16-8	MS	104-PeCB	93.4	U	104	112	50-150
32598-14-4	MS	105-PeCB	93.4	U	118	126	50-150
74472-37-0	MS	114-PeCB	93.4	U	107	114	50-150
31508-00-6	MS	118-PeCB	93.4		101	106	50-150
65510-44-3	MS	123-PeCB	93.4	U	100	108	50-150
57465-28-8	MS	126-PeCB	93.4	U	110	118	50-150
33979-03-2	MS	155-HxCB	93.4	U	98.2	105	50-150
38380-08-4	MS	156-HxCB	187	CU	223	119	50-150
69782-90-7	MS	157-HxCB		C156			
52663-72-6	MS	167-HxCB	93.4	U	115	123	50-150
32774-16-6	MS	169-HxCB	93.4	U	104	112	50-150
74487-85-7	MS	188-HpCB	93.4	U	98.9	106	50-150
39635-31-9	MS	189-HpCB	93.4	U	101	109	50-150
2136-99-4	MS	202-OcCB	140	U	147	105	50-150
74472-53-0	MS	205-OcCB	140	U	138	98.1	50-150
40186-72-9	MS	206-NoCB	140		146	102	50-150
52663-77-1	MS	208-NoCB	140	U	153	109	50-150
2051-24-3	MS	209-DeCB	140		147	102	50-150

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 2 of 2

SDG Number: L1629122

Sample Type: Matrix Spike Duplicate

Client ID: VC-A-03 DUP MSD

Matrix: SOIL

Lab Sample ID: 9796006

%Moisture: 13.1

Instrument: HRP791

Analysis Date: 10/13/2016 23:30

Dilution: 1

Analyst: MJC

Prep Batch ID: 32977

Batch ID: 32979

CAS No.	Parmname	Amount Added		Spike Conc.	Recovery	Acceptance	RPD	Acceptance	
		pg/g		pg/g	%	Limits	%	Limits	
2051-60-7	MSD	1-MoCB	47.0	U	51.3	109	50-150	9.28	0-25
2051-62-9	MSD	3-MoCB	47.0	U	56.3	120	50-150	5.07	0-25
13029-08-8	MSD	4-DiCB	47.0	QU	44.6	94.8	50-150	4.38	0-25
2050-68-2	MSD	15-DiCB	47.0		57.6	118	50-150	5.35	0-25
38444-73-4	MSD	19-TrCB	47.0	U	54.9	117	50-150	10.4	0-25
38444-90-5	MSD	37-TrCB	47.0	U	52.3	111	50-150	8.78	0-25
15968-05-5	MSD	54-TeCB	94.0	U	105	112	50-150	8.97	0-25
32598-13-3	MSD	77-TeCB	94.0	U	99.7	106	50-150	7.37	0-25
70362-50-4	MSD	81-TeCB	94.0	U	112	119	50-150	6.86	0-25
56558-16-8	MSD	104-PeCB	94.0	U	112	119	50-150	6.82	0-25
32598-14-4	MSD	105-PeCB	94.0	U	125	133	50-150	6.29	0-25
74472-37-0	MSD	114-PeCB	94.0	U	114	121	50-150	6.29	0-25
31508-00-6	MSD	118-PeCB	94.0		108	112	50-150	6.32	0-25
65510-44-3	MSD	123-PeCB	94.0	U	107	114	50-150	6.48	0-25
57465-28-8	MSD	126-PeCB	94.0	U	116	124	50-150	5.29	0-25
33979-03-2	MSD	155-HxCB	94.0	U	108	114	50-150	9.06	0-25
38380-08-4	MSD	156-HxCB	188	CU	235	125	50-150	5.25	0-25
69782-90-7	MSD	157-HxCB		C156					
52663-72-6	MSD	167-HxCB	94.0	U	122	130	50-150	6.04	0-25
32774-16-6	MSD	169-HxCB	94.0	U	111	118	50-150	5.76	0-25
74487-85-7	MSD	188-HpCB	94.0	U	106	113	50-150	7.24	0-25
39635-31-9	MSD	189-HpCB	94.0	U	107	114	50-150	5.50	0-25
2136-99-4	MSD	202-OcCB	141	U	158	112	50-150	7.35	0-25
74472-53-0	MSD	205-OcCB	141	U	146	104	50-150	6.26	0-25
40186-72-9	MSD	206-NoCB	141		154	108	50-150	5.76	0-25
52663-77-1	MSD	208-NoCB	141	U	164	116	50-150	6.48	0-25
2051-24-3	MSD	209-DeCB	141		157	109	50-150	7.11	0-25

## Method Blank Summary

Page 1 of 1

SDG Number: L1629122  
 Client ID: MB for batch 32977  
 Lab Sample ID: 12017041  
 Column:

Client: ALPH001  
 Instrument ID: HRP791  
 Prep Date: 05-OCT-16

Matrix: SOIL  
 Data File: c11oct16a\_2-4  
 Analyzed: 10/11/16 18:53

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 32977	12017042	c11oct16a_2-2	10/11/16	1641
02 LCSD for batch 32977	12017043	c11oct16a_2-3	10/11/16	1747
03 VC-A-01	9796001	c13oct16a-5	10/13/16	1759
04 VC-A-02	9796002	c13oct16a-6	10/13/16	1905
05 VC-A-03	9796003	c13oct16a-7	10/13/16	2012
06 VC-A-03 DUP	9796004	c13oct16a-8	10/13/16	2118
07 VC-A-03 DUP MS	9796005	c13oct16a-9	10/13/16	2224
08 VC-A-03 DUP MSD	9796006	c13oct16a-10	10/13/16	2330
09 VC-A-04-S1	9796007	c13oct16a_2-3	10/14/16	0407
10 VC-A-04-S2	9796008	c13oct16a_2-4	10/14/16	0513
11 VC-A-04-S3	9796009	c13oct16a_2-5	10/14/16	0619
12 VC-A-05	9796010	c13oct16a_2-6	10/14/16	0725
13 VC-A-06-S1	9796011	c13oct16a_2-7	10/14/16	0832
14 VC-A-06-S2	9796012	c13oct16a_2-8	10/14/16	0938

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

**SDG Number:** L1629122  
**Lab Sample ID:** 12017041  
**Client Sample:** QC for batch 32977  
**Client ID:** MB for batch 32977  
**Batch ID:** 32979  
**Run Date:** 10/11/2016 18:53  
**Data File:** c11oct16a\_2-4  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 10 g

**Project:** ALPH00416  
**Matrix:** SOIL  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2	pg/g	2.00
2051-61-8	2-MoCB	U	2	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB	U	2	pg/g	2.00
16605-91-7	5-DiCB	U	2	pg/g	2.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	2	pg/g	2.00
34883-43-7	8-DiCB	U	2	pg/g	2.00
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	2	pg/g	2.00
2050-67-1	11-DiCB		5.03	pg/g	4.00
2974-92-7	12-DiCB	CU	4	pg/g	4.00
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2	pg/g	2.00
2050-68-2	15-DiCB	U	2	pg/g	2.00
38444-78-9	16-TrCB	U	2	pg/g	2.00
37680-66-3	17-TrCB	U	2	pg/g	2.00
37680-65-2	18-TrCB	CU	4	pg/g	4.00
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	4	pg/g	4.00
55702-46-0	21-TrCB	CU	4	pg/g	4.00
38444-85-8	22-TrCB	U	2	pg/g	2.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	4	pg/g	4.00
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2	pg/g	2.00
38444-77-8	32-TrCB	U	2	pg/g	2.00

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 2 of 8

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017041		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32977		
<b>Client ID:</b> MB for batch 32977		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/11/2016 18:53	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c11oct16a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	2	pg/g	2.00
38444-87-0	36-TrCB	U	2	pg/g	2.00
38444-90-5	37-TrCB	U	2	pg/g	2.00
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	2	pg/g	2.00
38444-93-8	40-TeCB	CU	4	pg/g	4.00
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	2	pg/g	2.00
41464-39-5	44-TeCB	CU	6	pg/g	6.00
70362-45-7	45-TeCB	CU	4	pg/g	4.00
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	4	pg/g	4.00
62796-65-0	50-TeCB	CU	4	pg/g	4.00
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	2	pg/g	2.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	6	pg/g	6.00
33025-41-1	60-TeCB	U	2	pg/g	2.00
33284-53-6	61-TeCB	CU	8	pg/g	8.00
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2	pg/g	2.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017041		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32977		
<b>Client ID:</b> MB for batch 32977		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/11/2016 18:53	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c11oct16a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2	pg/g	2.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2	pg/g	2.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	2	pg/g	2.00
33284-52-5	80-TeCB	U	2	pg/g	2.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	2	pg/g	2.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	6	pg/g	6.00
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4	pg/g	4.00
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	6	pg/g	6.00
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	4	pg/g	4.00
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	2	pg/g	2.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1629122  
**Lab Sample ID:** 12017041  
**Client Sample:** QC for batch 32977  
**Client ID:** MB for batch 32977  
**Batch ID:** 32979  
**Run Date:** 10/11/2016 18:53  
**Data File:** c11oct16a\_2-4  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 10 g

**Project:** ALPH00416  
**Matrix:** SOIL  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4	pg/g	4.00
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2	pg/g	2.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	2	pg/g	2.00
70362-41-3	108-PeCB	CU	4	pg/g	4.00
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4	pg/g	4.00
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2	pg/g	2.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	4	pg/g	4.00

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**J** Value is estimated  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 5 of 8

**SDG Number:** L1629122  
**Lab Sample ID:** 12017041  
**Client Sample:** QC for batch 32977  
**Client ID:** MB for batch 32977  
**Batch ID:** 32979  
**Run Date:** 10/11/2016 18:53  
**Data File:** c11oct16a\_2-4  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 10 g

**Project:** ALPH00416  
**Matrix:** SOIL  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6	pg/g	6.00
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	4	pg/g	4.00
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4	pg/g	4.00
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2	pg/g	2.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	4	pg/g	4.00
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	4	pg/g	4.00
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	4	pg/g	4.00
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

**Comments:**

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**J** Value is estimated  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

**SDG Number:** L1629122  
**Lab Sample ID:** 12017041  
**Client Sample:** QC for batch 32977  
**Client ID:** MB for batch 32977  
**Batch ID:** 32979  
**Run Date:** 10/11/2016 18:53  
**Data File:** c11oct16a\_2-4  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 10 g

**Project:** ALPH00416  
**Matrix:** SOIL  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	4	pg/g	4.00
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	4	pg/g	4.00
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	4	pg/g	4.00
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017041		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32977		
<b>Client ID:</b> MB for batch 32977		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/11/2016 18:53	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c11oct16a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	4	pg/g	4.00
68194-17-2	198-OcCB	CU	4	pg/g	4.00
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners		5.03	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		72.3	200	pg/g	36.1	(15%-150%)
13C-3-MoCB		93.7	200	pg/g	46.8	(15%-150%)
13C-4-DiCB		76.8	200	pg/g	38.4	(25%-150%)
13C-15-DiCB		184	200	pg/g	92.1	(25%-150%)
13C-19-TrCB		143	200	pg/g	71.3	(25%-150%)
13C-37-TrCB		170	200	pg/g	85.1	(25%-150%)
13C-54-TeCB		118	200	pg/g	58.9	(25%-150%)
13C-77-TeCB		218	200	pg/g	109	(25%-150%)
13C-81-TeCB		219	200	pg/g	109	(25%-150%)
13C-104-PeCB		121	200	pg/g	60.5	(25%-150%)
13C-105-PeCB		179	200	pg/g	89.4	(25%-150%)
13C-114-PeCB		176	200	pg/g	87.8	(25%-150%)
13C-118-PeCB		180	200	pg/g	89.9	(25%-150%)
13C-123-PeCB		181	200	pg/g	90.6	(25%-150%)
13C-126-PeCB		184	200	pg/g	92.0	(25%-150%)
13C-155-HxCB		127	200	pg/g	63.7	(25%-150%)
13C-156-HxCB	C	309	400	pg/g	77.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		161	200	pg/g	80.5	(25%-150%)
13C-169-HxCB		158	200	pg/g	79.2	(25%-150%)
13C-188-HpCB		159	200	pg/g	79.7	(25%-150%)
13C-189-HpCB		162	200	pg/g	80.9	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017041		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32977		
<b>Client ID:</b> MB for batch 32977		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/11/2016 18:53	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c11oct16a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-202-OcCB			176	200	pg/g	88.1 (25%-150%)
13C-205-OcCB			185	200	pg/g	92.4 (25%-150%)
13C-206-NoCB			179	200	pg/g	89.4 (25%-150%)
13C-208-NoCB			178	200	pg/g	88.8 (25%-150%)
13C-209-DeCB			193	200	pg/g	96.4 (25%-150%)
13C-111-PeCB			197	200	pg/g	98.3 (30%-135%)
13C-28-TrCB			154	200	pg/g	77.2 (30%-135%)
13C-178-HpCB			198	200	pg/g	99.2 (30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017042		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32977		
<b>Client ID:</b> LCS for batch 32977		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/11/2016 16:41	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c11oct16a_2-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		52.4	pg/g	2.00
2051-62-9	3-MoCB		57.1	pg/g	2.00
13029-08-8	4-DiCB		45.6	pg/g	2.00
2050-68-2	15-DiCB		58.9	pg/g	2.00
38444-73-4	19-TrCB		53.6	pg/g	2.00
38444-90-5	37-TrCB		50.8	pg/g	2.00
15968-05-5	54-TeCB		106	pg/g	2.00
32598-13-3	77-TeCB		101	pg/g	2.00
70362-50-4	81-TeCB		114	pg/g	2.00
56558-16-8	104-PeCB		112	pg/g	2.00
32598-14-4	105-PeCB		128	pg/g	2.00
74472-37-0	114-PeCB		117	pg/g	2.00
31508-00-6	118-PeCB		107	pg/g	2.00
65510-44-3	123-PeCB		110	pg/g	2.00
57465-28-8	126-PeCB		119	pg/g	2.00
33979-03-2	155-HxCB		109	pg/g	2.00
38380-08-4	156-HxCB	C	240	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		125	pg/g	2.00
32774-16-6	169-HxCB		113	pg/g	2.00
74487-85-7	188-HpCB		106	pg/g	2.00
39635-31-9	189-HpCB		110	pg/g	2.00
2136-99-4	202-OcCB		154	pg/g	2.00
74472-53-0	205-OcCB		147	pg/g	2.00
40186-72-9	206-NoCB		153	pg/g	2.00
52663-77-1	208-NoCB		160	pg/g	2.00
2051-24-3	209-DeCB		148	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		79.9	200	pg/g	40.0	(15%-140%)
13C-3-MoCB		94.7	200	pg/g	47.3	(15%-140%)
13C-4-DiCB		74.6	200	pg/g	37.3	(30%-140%)
13C-15-DiCB		178	200	pg/g	88.8	(30%-140%)
13C-19-TrCB		131	200	pg/g	65.4	(30%-140%)
13C-37-TrCB		161	200	pg/g	80.5	(30%-140%)
13C-54-TeCB		100	200	pg/g	50.1	(30%-140%)
13C-77-TeCB		202	200	pg/g	101	(30%-140%)
13C-81-TeCB		202	200	pg/g	101	(30%-140%)
13C-104-PeCB		106	200	pg/g	53.1	(30%-140%)
13C-105-PeCB		159	200	pg/g	79.5	(30%-140%)
13C-114-PeCB		157	200	pg/g	78.4	(30%-140%)
13C-118-PeCB		160	200	pg/g	80.0	(30%-140%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017042		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32977		
<b>Client ID:</b> LCS for batch 32977		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/11/2016 16:41	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c11oct16a_2-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL	
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%      Acceptable Limits</b>
13C-123-PeCB			161	200	pg/g	80.6      (30%-140%)
13C-126-PeCB			168	200	pg/g	83.9      (30%-140%)
13C-155-HxCB			113	200	pg/g	56.6      (30%-140%)
13C-156-HxCB		C	276	400	pg/g	68.9      (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			144	200	pg/g	71.9      (30%-140%)
13C-169-HxCB			145	200	pg/g	72.4      (30%-140%)
13C-188-HpCB			142	200	pg/g	71.0      (30%-140%)
13C-189-HpCB			144	200	pg/g	72.2      (30%-140%)
13C-202-OcCB			154	200	pg/g	76.9      (30%-140%)
13C-205-OcCB			161	200	pg/g	80.6      (30%-140%)
13C-206-NoCB			161	200	pg/g	80.3      (30%-140%)
13C-208-NoCB			155	200	pg/g	77.5      (30%-140%)
13C-209-DeCB			173	200	pg/g	86.7      (30%-140%)
13C-111-PeCB			171	200	pg/g	85.5      (40%-125%)
13C-28-TrCB			131	200	pg/g	65.6      (40%-125%)
13C-178-HpCB			171	200	pg/g	85.5      (40%-125%)

**Comments:**  
 C Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017043		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32977		
<b>Client ID:</b> LCSD for batch 32977		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/11/2016 17:47	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c11oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		51.6	pg/g	2.00
2051-62-9	3-MoCB		59.0	pg/g	2.00
13029-08-8	4-DiCB		41.8	pg/g	2.00
2050-68-2	15-DiCB		57.4	pg/g	2.00
38444-73-4	19-TrCB		49.7	pg/g	2.00
38444-90-5	37-TrCB		49.7	pg/g	2.00
15968-05-5	54-TeCB		103	pg/g	2.00
32598-13-3	77-TeCB		98.4	pg/g	2.00
70362-50-4	81-TeCB		111	pg/g	2.00
56558-16-8	104-PeCB		108	pg/g	2.00
32598-14-4	105-PeCB		123	pg/g	2.00
74472-37-0	114-PeCB		112	pg/g	2.00
31508-00-6	118-PeCB		105	pg/g	2.00
65510-44-3	123-PeCB		106	pg/g	2.00
57465-28-8	126-PeCB		116	pg/g	2.00
33979-03-2	155-HxCB		104	pg/g	2.00
38380-08-4	156-HxCB	C	234	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		122	pg/g	2.00
32774-16-6	169-HxCB		110	pg/g	2.00
74487-85-7	188-HpCB		104	pg/g	2.00
39635-31-9	189-HpCB		107	pg/g	2.00
2136-99-4	202-OcCB		150	pg/g	2.00
74472-53-0	205-OcCB		142	pg/g	2.00
40186-72-9	206-NoCB		148	pg/g	2.00
52663-77-1	208-NoCB		157	pg/g	2.00
2051-24-3	209-DeCB		145	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		86.0	200	pg/g	43.0	(15%-140%)
13C-3-MoCB		106	200	pg/g	53.2	(15%-140%)
13C-4-DiCB		90.8	200	pg/g	45.4	(30%-140%)
13C-15-DiCB		207	200	pg/g	103	(30%-140%)
13C-19-TrCB		160	200	pg/g	80.1	(30%-140%)
13C-37-TrCB		182	200	pg/g	91.2	(30%-140%)
13C-54-TeCB		123	200	pg/g	61.5	(30%-140%)
13C-77-TeCB		232	200	pg/g	116	(30%-140%)
13C-81-TeCB		234	200	pg/g	117	(30%-140%)
13C-104-PeCB		130	200	pg/g	65.0	(30%-140%)
13C-105-PeCB		193	200	pg/g	96.7	(30%-140%)
13C-114-PeCB		190	200	pg/g	94.8	(30%-140%)
13C-118-PeCB		193	200	pg/g	96.6	(30%-140%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 12017043		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 32977		
<b>Client ID:</b> LCSD for batch 32977		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/11/2016 17:47	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c11oct16a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-123-PeCB			195	200	pg/g	97.4 (30%-140%)
13C-126-PeCB			200	200	pg/g	100 (30%-140%)
13C-155-HxCB			133	200	pg/g	66.5 (30%-140%)
13C-156-HxCB		C	329	400	pg/g	82.2 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			172	200	pg/g	85.9 (30%-140%)
13C-169-HxCB			170	200	pg/g	85.2 (30%-140%)
13C-188-HpCB			165	200	pg/g	82.7 (30%-140%)
13C-189-HpCB			171	200	pg/g	85.7 (30%-140%)
13C-202-OcCB			184	200	pg/g	92.0 (30%-140%)
13C-205-OcCB			196	200	pg/g	98.2 (30%-140%)
13C-206-NoCB			193	200	pg/g	96.7 (30%-140%)
13C-208-NoCB			187	200	pg/g	93.4 (30%-140%)
13C-209-DeCB			202	200	pg/g	101 (30%-140%)
13C-111-PeCB			190	200	pg/g	95.0 (40%-125%)
13C-28-TrCB			146	200	pg/g	73.2 (40%-125%)
13C-178-HpCB			191	200	pg/g	95.3 (40%-125%)

**Comments:**

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

**SDG Number:** L1629122  
**Lab Sample ID:** 9796005  
**Client Sample:** MS for 9796004 (VC-A-03 DUP)  
**Client ID:** VC-A-03 DUP MS  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 22:24  
**Data File:** c13oct16a-9  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/07/2016 19:30  
**Date Received:** 09/21/2016 09:50  
  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.32 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 13.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		46.7	pg/g	1.87
2051-62-9	3-MoCB		53.5	pg/g	1.87
13029-08-8	4-DiCB	Q	42.7	pg/g	1.87
2050-68-2	15-DiCB		54.6	pg/g	1.87
38444-73-4	19-TrCB		49.4	pg/g	1.87
38444-90-5	37-TrCB		47.9	pg/g	1.87
15968-05-5	54-TeCB		96.4	pg/g	1.87
32598-13-3	77-TeCB		92.6	pg/g	1.87
70362-50-4	81-TeCB		104	pg/g	1.87
56558-16-8	104-PeCB		104	pg/g	1.87
32598-14-4	105-PeCB		118	pg/g	1.87
74472-37-0	114-PeCB		107	pg/g	1.87
31508-00-6	118-PeCB		101	pg/g	1.87
65510-44-3	123-PeCB		100	pg/g	1.87
57465-28-8	126-PeCB		110	pg/g	1.87
33979-03-2	155-HxCB		98.2	pg/g	1.87
38380-08-4	156-HxCB	C	223	pg/g	3.74
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		115	pg/g	1.87
32774-16-6	169-HxCB		104	pg/g	1.87
74487-85-7	188-HpCB		98.9	pg/g	1.87
39635-31-9	189-HpCB		101	pg/g	1.87
2136-99-4	202-OcCB		147	pg/g	1.87
74472-53-0	205-OcCB		138	pg/g	1.87
40186-72-9	206-NoCB		146	pg/g	1.87
52663-77-1	208-NoCB		153	pg/g	1.87
2051-24-3	209-DeCB		147	pg/g	1.87

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		51.1	187	pg/g	27.3	(15%-150%)
13C-3-MoCB		69.7	187	pg/g	37.3	(15%-150%)
13C-4-DiCB	Q	35.4	187	pg/g	18.9 *	(25%-150%)
13C-15-DiCB		154	187	pg/g	82.6	(25%-150%)
13C-19-TrCB		84.6	187	pg/g	45.3	(25%-150%)
13C-37-TrCB		170	187	pg/g	91.0	(25%-150%)
13C-54-TeCB		64.1	187	pg/g	34.3	(25%-150%)
13C-77-TeCB		220	187	pg/g	118	(25%-150%)
13C-81-TeCB		221	187	pg/g	118	(25%-150%)
13C-104-PeCB		75.5	187	pg/g	40.4	(25%-150%)
13C-105-PeCB		172	187	pg/g	92.1	(25%-150%)
13C-114-PeCB		169	187	pg/g	90.2	(25%-150%)
13C-118-PeCB		173	187	pg/g	92.5	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796005	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> MS for 9796004 (VC-A-03 DUP)	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP MS		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 22:24	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.32 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-123-PeCB			174	pg/g	93.3	(25%-150%)
13C-126-PeCB			173	pg/g	92.7	(25%-150%)
13C-155-HxCB			88.1	pg/g	47.2	(25%-150%)
13C-156-HxCB		C	283	pg/g	75.8	(25%-150%)
13C-157-HxCB		C156L				
13C-167-HxCB			151	pg/g	80.7	(25%-150%)
13C-169-HxCB			143	pg/g	76.8	(25%-150%)
13C-188-HpCB			119	pg/g	63.8	(25%-150%)
13C-189-HpCB			150	pg/g	80.5	(25%-150%)
13C-202-OcCB			128	pg/g	68.4	(25%-150%)
13C-205-OcCB			147	pg/g	78.8	(25%-150%)
13C-206-NoCB			126	pg/g	67.6	(25%-150%)
13C-208-NoCB			131	pg/g	69.9	(25%-150%)
13C-209-DeCB			116	pg/g	62.0	(25%-150%)
13C-111-PeCB			150	pg/g	80.3	(30%-135%)
13C-28-TrCB			106	pg/g	56.6	(30%-135%)
13C-178-HpCB			130	pg/g	69.5	(30%-135%)

**Comments:**  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**Q** Quantitative Interference; value is estimated

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

**SDG Number:** L1629122  
**Lab Sample ID:** 9796006  
**Client Sample:** MSD for 9796004 (VC-A-03 DUP)  
**Client ID:** VC-A-03 DUP MSD  
**Batch ID:** 32979  
**Run Date:** 10/13/2016 23:30  
**Data File:** c13oct16a-10  
**Prep Batch:** 32977  
**Prep Date:** 05-OCT-16

**Client:** ALPH001  
**Date Collected:** 09/07/2016 19:30  
**Date Received:** 09/21/2016 09:50  
**Method:** EPA Method 1668A  
**Analyst:** MJC  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.24 g

**Project:** ALPH00416  
**Matrix:** SOIL  
**%Moisture:** 13.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		51.3	pg/g	1.88
2051-62-9	3-MoCB		56.3	pg/g	1.88
13029-08-8	4-DiCB	Q	44.6	pg/g	1.88
2050-68-2	15-DiCB		57.6	pg/g	1.88
38444-73-4	19-TrCB		54.9	pg/g	1.88
38444-90-5	37-TrCB		52.3	pg/g	1.88
15968-05-5	54-TeCB		105	pg/g	1.88
32598-13-3	77-TeCB		99.7	pg/g	1.88
70362-50-4	81-TeCB		112	pg/g	1.88
56558-16-8	104-PeCB		112	pg/g	1.88
32598-14-4	105-PeCB		125	pg/g	1.88
74472-37-0	114-PeCB		114	pg/g	1.88
31508-00-6	118-PeCB		108	pg/g	1.88
65510-44-3	123-PeCB		107	pg/g	1.88
57465-28-8	126-PeCB		116	pg/g	1.88
33979-03-2	155-HxCB		108	pg/g	1.88
38380-08-4	156-HxCB	C	235	pg/g	3.76
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		122	pg/g	1.88
32774-16-6	169-HxCB		111	pg/g	1.88
74487-85-7	188-HpCB		106	pg/g	1.88
39635-31-9	189-HpCB		107	pg/g	1.88
2136-99-4	202-OcCB		158	pg/g	1.88
74472-53-0	205-OcCB		146	pg/g	1.88
40186-72-9	206-NoCB		154	pg/g	1.88
52663-77-1	208-NoCB		164	pg/g	1.88
2051-24-3	209-DeCB		157	pg/g	1.88

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		54.4	188	pg/g	28.9	(15%-150%)
13C-3-MoCB		64.5	188	pg/g	34.3	(15%-150%)
13C-4-DiCB	Q	34.3	188	pg/g	18.2 *	(25%-150%)
13C-15-DiCB		150	188	pg/g	79.7	(25%-150%)
13C-19-TrCB		78.6	188	pg/g	41.8	(25%-150%)
13C-37-TrCB		149	188	pg/g	79.1	(25%-150%)
13C-54-TeCB		53.8	188	pg/g	28.6	(25%-150%)
13C-77-TeCB		193	188	pg/g	103	(25%-150%)
13C-81-TeCB		191	188	pg/g	102	(25%-150%)
13C-104-PeCB		65.3	188	pg/g	34.7	(25%-150%)
13C-105-PeCB		150	188	pg/g	79.7	(25%-150%)
13C-114-PeCB		146	188	pg/g	77.6	(25%-150%)
13C-118-PeCB		149	188	pg/g	79.5	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1629122	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00416
<b>Lab Sample ID:</b> 9796006	<b>Date Collected:</b> 09/07/2016 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> MSD for 9796004 (VC-A-03 DUP)	<b>Date Received:</b> 09/21/2016 09:50	<b>%Moisture:</b> 13.1
<b>Client ID:</b> VC-A-03 DUP MSD		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 32979	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/13/2016 23:30	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP791
<b>Data File:</b> c13oct16a-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 32977	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 05-OCT-16	<b>Prep Aliquot:</b> 12.24 g	

CAS No.	Parmname	Qual	Result	Units	PQL	
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-123-PeCB			151	188	pg/g	80.2 (25%-150%)
13C-126-PeCB			155	188	pg/g	82.5 (25%-150%)
13C-155-HxCB			77.0	188	pg/g	40.9 (25%-150%)
13C-156-HxCB		C	254	376	pg/g	67.6 (25%-150%)
13C-157-HxCB		C156L				
13C-167-HxCB			133	188	pg/g	70.7 (25%-150%)
13C-169-HxCB			130	188	pg/g	69.0 (25%-150%)
13C-188-HpCB			104	188	pg/g	55.4 (25%-150%)
13C-189-HpCB			134	188	pg/g	71.1 (25%-150%)
13C-202-OcCB			112	188	pg/g	59.7 (25%-150%)
13C-205-OcCB			133	188	pg/g	70.5 (25%-150%)
13C-206-NoCB			113	188	pg/g	60.0 (25%-150%)
13C-208-NoCB			116	188	pg/g	61.4 (25%-150%)
13C-209-DeCB			104	188	pg/g	55.3 (25%-150%)
13C-111-PeCB			139	188	pg/g	73.7 (30%-135%)
13C-28-TrCB			98.0	188	pg/g	52.1 (30%-135%)
13C-178-HpCB			123	188	pg/g	65.6 (30%-135%)

**Comments:**  
 C Congener has coeluters. When Cxxx, refer to congener number xxx for data  
 Q Quantitative Interference; value is estimated



## ANALYTICAL REPORT

Lab Number:	L1736278
Client:	ESS Group, Inc. 100 Fifth Avenue 5th Floor Waltham, MA 02451
ATTN:	Michael Phillips
Phone:	(781) 419-7718
Project Name:	US WIND
Project Number:	U167-022
Report Date:	11/17/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1736278-01	VC-IRB-01	SEDIMENT	DELAWARE	10/07/17 18:20	10/09/17
L1736278-02	VC-IRB-02	SEDIMENT	DELAWARE	10/07/17 14:40	10/09/17
L1736278-03	VC-IRB-03-S1	SEDIMENT	DELAWARE	10/07/17 15:40	10/09/17
L1736278-04	VC-IRB-03-S2	SEDIMENT	DELAWARE	10/07/17 15:50	10/09/17
L1736278-05	VC-IRB-04	SEDIMENT	DELAWARE	10/06/17 18:40	10/09/17
L1736278-06	VC-IRB-05-S1	SEDIMENT	DELAWARE	10/06/17 19:30	10/09/17
L1736278-07	VC-IRB-05-S2	SEDIMENT	DELAWARE	10/06/17 19:40	10/09/17
L1736278-08	VC-IRB-06	SEDIMENT	DELAWARE	10/06/17 20:30	10/09/17
L1736278-09	VC-IRB-07-ALT-S1	SEDIMENT	DELAWARE	10/07/17 19:00	10/09/17
L1736278-10	VC-IRB-07-ALT-S2	SEDIMENT	DELAWARE	10/07/17 19:10	10/09/17
L1736278-11	VC-IRB-08-ALT-S1	SEDIMENT	DELAWARE	10/08/17 18:10	10/09/17
L1736278-12	VC-IRB-08-ALT-S2	SEDIMENT	DELAWARE	10/08/17 18:20	10/09/17
L1736278-13	VC-IRB-08-ALT-S3	SEDIMENT	DELAWARE	10/08/17 18:30	10/09/17
L1736278-14	VC-IRB-09-ALT	SEDIMENT	DELAWARE	10/08/17 16:00	10/09/17
L1736278-15	VC-IRB-10	SEDIMENT	DELAWARE	10/07/17 17:05	10/09/17
L1736278-16	VC-IRB-12-S1	SEDIMENT	DELAWARE	10/06/17 12:30	10/09/17
L1736278-17	VC-IRB-12-S2	SEDIMENT	DELAWARE	10/06/17 12:40	10/09/17
L1736278-18	VC-IRB-25	SEDIMENT	DELAWARE	10/07/17 14:45	10/09/17

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

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**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

### Case Narrative (continued)

#### Report Submission

The analysis of Dioxins and Furans, and PCB congeners was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

#### Total Metals

The WG1054422-3 MS recoveries, performed on L1736278-15, are outside the acceptance criteria for calcium (155%) and potassium (147%). A post digestion spike was performed and was within acceptance criteria.

The WG1054422-3 MS recoveries, performed on L1736278-15, are outside the acceptance criteria for manganese (154%) and sodium (343%). A post digestion spike was performed and yielded unacceptable recoveries for manganese (206%) and sodium (185%). This has been attributed to sample matrix.

The WG1054422-3 MS recoveries for aluminum (2030%), iron (6020%) and magnesium (192%), performed on L1736278-15, do not apply because the sample concentration is greater than four times the spike amount added.

The WG1054422-4 MSD recoveries, performed on L1736278-15, are outside the acceptance criteria for manganese (138%) and sodium (311%). A post digestion spike was performed and yielded unacceptable recoveries for manganese (206%) and sodium (185%). This has been attributed to sample matrix.

The WG1054422-4 MSD recoveries for aluminum (1860%), iron (5220%), magnesium (178%) and manganese (138%), performed on L1736278-15, do not apply because the sample concentration is greater than four times the spike amount added.

The WG1054422-4 MSD recoveries, performed on L1736278-15, are outside the acceptance criteria for calcium (140%) and potassium (144%). A post digestion spike was performed and was within acceptance criteria.

#### SOOT

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

### Case Narrative (continued)

L1736278-01 to 18 were frozen upon receipt in order to arrest the holding time.

#### Phosphorus, Total

WG1053383-1: A Matrix Spike and Laboratory Duplicate were prepared with the sample batch, however, the native sample was not available for reporting; therefore, the Matrix Spike and Laboratory Duplicate results could not be reported.

#### Moisture

The WG1061280-1 Laboratory Duplicate RPD for moisture (28%), performed on L1736278-15, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

#### Total Organic Carbon

L1736278-01 thru 18 were frozen upon receipt in order to arrest the holding time.

The WG1062984-4 MS recovery for total organic carbon (rep2) (211%), performed on L1736278-07, does not apply because the sample concentration is greater than four times the spike amount added.

#### Grain Size Analysis

The WG1060825-1 Laboratory Duplicate RPDs for % coarse sand (34%) and % clay fine (31%), performed on L1736278-15, are outside the acceptance criteria. The elevated RPDs have been attributed to the non-homogeneous nature of the native sample.

#### Atterberg Limits

The WG1064167-1 Laboratory Duplicate RPD for plasticity index (22%), performed on L1736278-03, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

The WG1064167-2 Laboratory Duplicate RPD for plasticity index (120%), performed on L1736278-11, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the

**Project Name:** US WIND  
**Project Number:** U167-022

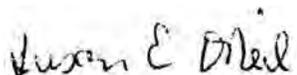
**Lab Number:** L1736278  
**Report Date:** 11/17/17

**Case Narrative (continued)**

native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Susan O'Neil

Title: Technical Director/Representative

Date: 11/17/17

# ORGANICS

# SEMIVOLATILES

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-01  
 Client ID: VC-IRB-01  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/09/17 21:47  
 Analyst: GP  
 Percent Solids: 44%

Date Collected: 10/07/17 18:20  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	4.59	J	ug/kg	8.53	0.764	1
Acenaphthylene	ND		ug/kg	8.53	0.572	1
Acenaphthene	1.26	J	ug/kg	8.53	0.956	1
Fluorene	1.94	J	ug/kg	8.53	0.570	1
Phenanthrene	2.94	J	ug/kg	8.53	1.01	1
Anthracene	ND		ug/kg	8.53	1.06	1
Fluoranthene	3.11	J	ug/kg	8.53	1.56	1
Pyrene	3.34	J	ug/kg	8.53	0.870	1
Benz(a)anthracene	ND		ug/kg	8.53	2.28	1
Chrysene	1.05	J	ug/kg	8.53	0.750	1
Benzo(b)fluoranthene	1.45	J	ug/kg	8.53	0.888	1
Benzo(k)fluoranthene	ND		ug/kg	8.53	0.879	1
Benzo(a)pyrene	ND		ug/kg	8.53	0.998	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.53	2.43	1
Dibenz(a,h)anthracene	1.95	J	ug/kg	8.53	0.879	1
Benzo(g,h,i)perylene	1.41	J	ug/kg	8.53	0.703	1
2-Methylnaphthalene	1.83	J	ug/kg	8.53	1.06	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	54		30-130
Pyrene-d10	73		30-130
Benzo(b)fluoranthene-d12	71		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-02  
 Client ID: VC-IRB-02  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/09/17 22:17  
 Analyst: GP  
 Percent Solids: 34%

Date Collected: 10/07/17 14:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	8.82	J	ug/kg	11.4	1.02	1
Acenaphthylene	2.03	J	ug/kg	11.4	0.764	1
Acenaphthene	2.78	J	ug/kg	11.4	1.28	1
Fluorene	5.15	J	ug/kg	11.4	0.762	1
Phenanthrene	9.55	J	ug/kg	11.4	1.35	1
Anthracene	3.26	J	ug/kg	11.4	1.42	1
Fluoranthene	16.7		ug/kg	11.4	2.09	1
Pyrene	15.9		ug/kg	11.4	1.16	1
Benz(a)anthracene	6.31	J	ug/kg	11.4	3.05	1
Chrysene	8.00	J	ug/kg	11.4	1.00	1
Benzo(b)fluoranthene	11.0	J	ug/kg	11.4	1.19	1
Benzo(k)fluoranthene	5.44	J	ug/kg	11.4	1.18	1
Benzo(a)pyrene	6.55	J	ug/kg	11.4	1.34	1
Indeno(1,2,3-cd)pyrene	7.84	J	ug/kg	11.4	3.25	1
Dibenz(a,h)anthracene	2.95	J	ug/kg	11.4	1.18	1
Benzo(g,h,i)perylene	8.25	J	ug/kg	11.4	0.940	1
2-Methylnaphthalene	7.01	J	ug/kg	11.4	1.42	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	40		30-130
Pyrene-d10	69		30-130
Benzo(b)fluoranthene-d12	63		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-03  
 Client ID: VC-IRB-03-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/09/17 22:48  
 Analyst: GP  
 Percent Solids: 60%

Date Collected: 10/07/17 15:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	3.85	J	ug/kg	6.57	0.588	1
Acenaphthylene	ND		ug/kg	6.57	0.440	1
Acenaphthene	1.68	J	ug/kg	6.57	0.736	1
Fluorene	1.57	J	ug/kg	6.57	0.439	1
Phenanthrene	3.00	J	ug/kg	6.57	0.776	1
Anthracene	0.908	J	ug/kg	6.57	0.815	1
Fluoranthene	4.48	J	ug/kg	6.57	1.20	1
Pyrene	4.36	J	ug/kg	6.57	0.671	1
Benzo(a)anthracene	2.25	J	ug/kg	6.57	1.76	1
Chrysene	1.92	J	ug/kg	6.57	0.578	1
Benzo(b)fluoranthene	3.22	J	ug/kg	6.57	0.684	1
Benzo(k)fluoranthene	1.57	J	ug/kg	6.57	0.677	1
Benzo(a)pyrene	1.66	J	ug/kg	6.57	0.769	1
Indeno(1,2,3-cd)pyrene	2.49	J	ug/kg	6.57	1.87	1
Dibenz(a,h)anthracene	0.694	J	ug/kg	6.57	0.677	1
Benzo(g,h,i)perylene	2.10	J	ug/kg	6.57	0.542	1
2-Methylnaphthalene	1.82	J	ug/kg	6.57	0.815	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	48		30-130
Pyrene-d10	84		30-130
Benzo(b)fluoranthene-d12	82		30-130



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-04  
 Client ID: VC-IRB-03-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/09/17 23:18  
 Analyst: GP  
 Percent Solids: 33%

Date Collected: 10/07/17 15:50  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	11.7	J	ug/kg	11.8	1.06	1
Acenaphthylene	0.924	J	ug/kg	11.8	0.794	1
Acenaphthene	2.49	J	ug/kg	11.8	1.33	1
Fluorene	3.06	J	ug/kg	11.8	0.791	1
Phenanthrene	7.81	J	ug/kg	11.8	1.40	1
Anthracene	1.67	J	ug/kg	11.8	1.47	1
Fluoranthene	6.97	J	ug/kg	11.8	2.17	1
Pyrene	6.70	J	ug/kg	11.8	1.21	1
Benz(a)anthracene	ND		ug/kg	11.8	3.16	1
Chrysene	2.59	J	ug/kg	11.8	1.04	1
Benzo(b)fluoranthene	3.53	J	ug/kg	11.8	1.23	1
Benzo(k)fluoranthene	ND		ug/kg	11.8	1.22	1
Benzo(a)pyrene	ND		ug/kg	11.8	1.38	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	11.8	3.38	1
Dibenz(a,h)anthracene	ND		ug/kg	11.8	1.22	1
Benzo(g,h,i)perylene	1.94	J	ug/kg	11.8	0.976	1
2-Methylnaphthalene	4.20	J	ug/kg	11.8	1.47	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	62		30-130
Pyrene-d10	71		30-130
Benzo(b)fluoranthene-d12	67		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-05  
 Client ID: VC-IRB-04  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/09/17 23:49  
 Analyst: GP  
 Percent Solids: 46%

Date Collected: 10/06/17 18:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	3.81	J	ug/kg	8.20	0.734	1
Acenaphthylene	ND		ug/kg	8.20	0.549	1
Acenaphthene	1.62	J	ug/kg	8.20	0.918	1
Fluorene	2.10	J	ug/kg	8.20	0.548	1
Phenanthrene	4.40	J	ug/kg	8.20	0.968	1
Anthracene	1.12	J	ug/kg	8.20	1.02	1
Fluoranthene	4.36	J	ug/kg	8.20	1.50	1
Pyrene	5.35	J	ug/kg	8.20	0.836	1
Benz(a)anthracene	ND		ug/kg	8.20	2.19	1
Chrysene	2.89	J	ug/kg	8.20	0.721	1
Benzo(b)fluoranthene	3.05	J	ug/kg	8.20	0.853	1
Benzo(k)fluoranthene	ND		ug/kg	8.20	0.845	1
Benzo(a)pyrene	ND		ug/kg	8.20	0.959	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.20	2.34	1
Dibenz(a,h)anthracene	ND		ug/kg	8.20	0.845	1
Benzo(g,h,i)perylene	1.14	J	ug/kg	8.20	0.676	1
2-Methylnaphthalene	1.32	J	ug/kg	8.20	1.02	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	55		30-130
Pyrene-d10	80		30-130
Benzo(b)fluoranthene-d12	73		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-06  
 Client ID: VC-IRB-05-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 00:20  
 Analyst: GP  
 Percent Solids: 41%

Date Collected: 10/06/17 19:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	5.92	J	ug/kg	9.50	0.850	1
Acenaphthylene	ND		ug/kg	9.50	0.636	1
Acenaphthene	1.38	J	ug/kg	9.50	1.06	1
Fluorene	2.24	J	ug/kg	9.50	0.634	1
Phenanthrene	4.32	J	ug/kg	9.50	1.12	1
Anthracene	1.40	J	ug/kg	9.50	1.18	1
Fluoranthene	6.26	J	ug/kg	9.50	1.74	1
Pyrene	7.83	J	ug/kg	9.50	0.969	1
Benzo(a)anthracene	3.34	J	ug/kg	9.50	2.54	1
Chrysene	3.04	J	ug/kg	9.50	0.835	1
Benzo(b)fluoranthene	3.84	J	ug/kg	9.50	0.988	1
Benzo(k)fluoranthene	2.77	J	ug/kg	9.50	0.978	1
Benzo(a)pyrene	2.54	J	ug/kg	9.50	1.11	1
Indeno(1,2,3-cd)pyrene	3.61	J	ug/kg	9.50	2.71	1
Dibenz(a,h)anthracene	1.10	J	ug/kg	9.50	0.978	1
Benzo(g,h,i)perylene	3.06	J	ug/kg	9.50	0.783	1
2-Methylnaphthalene	2.36	J	ug/kg	9.50	1.18	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	60		30-130
Pyrene-d10	83		30-130
Benzo(b)fluoranthene-d12	74		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-07  
 Client ID: VC-IRB-05-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 00:51  
 Analyst: GP  
 Percent Solids: 14%

Date Collected: 10/06/17 19:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	41.1		ug/kg	27.0	2.42	1
Acenaphthylene	3.75	J	ug/kg	27.0	1.81	1
Acenaphthene	7.52	J	ug/kg	27.0	3.03	1
Fluorene	13.3	J	ug/kg	27.0	1.80	1
Phenanthrene	45.0		ug/kg	27.0	3.19	1
Anthracene	6.38	J	ug/kg	27.0	3.35	1
Fluoranthene	22.3	J	ug/kg	27.0	4.94	1
Pyrene	19.5	J	ug/kg	27.0	2.76	1
Benz(a)anthracene	ND		ug/kg	27.0	7.21	1
Chrysene	4.31	J	ug/kg	27.0	2.38	1
Benzo(b)fluoranthene	ND		ug/kg	27.0	2.81	1
Benzo(k)fluoranthene	ND		ug/kg	27.0	2.78	1
Benzo(a)pyrene	ND		ug/kg	27.0	3.16	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	27.0	7.70	1
Dibenz(a,h)anthracene	ND		ug/kg	27.0	2.78	1
Benzo(g,h,i)perylene	ND		ug/kg	27.0	2.23	1
2-Methylnaphthalene	13.0	J	ug/kg	27.0	3.35	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	47		30-130
Pyrene-d10	52		30-130
Benzo(b)fluoranthene-d12	49		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-08  
 Client ID: VC-IRB-06  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 01:21  
 Analyst: GP  
 Percent Solids: 33%

Date Collected: 10/06/17 20:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	10.4	J	ug/kg	11.2	1.00	1
Acenaphthylene	0.844	J	ug/kg	11.2	0.751	1
Acenaphthene	2.92	J	ug/kg	11.2	1.26	1
Fluorene	5.26	J	ug/kg	11.2	0.748	1
Phenanthrene	6.59	J	ug/kg	11.2	1.32	1
Anthracene	1.57	J	ug/kg	11.2	1.39	1
Fluoranthene	6.83	J	ug/kg	11.2	2.05	1
Pyrene	6.35	J	ug/kg	11.2	1.14	1
Benz(a)anthracene	ND		ug/kg	11.2	2.99	1
Chrysene	1.97	J	ug/kg	11.2	0.985	1
Benzo(b)fluoranthene	1.80	J	ug/kg	11.2	1.16	1
Benzo(k)fluoranthene	1.37	J	ug/kg	11.2	1.15	1
Benzo(a)pyrene	1.38	J	ug/kg	11.2	1.31	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	11.2	3.19	1
Dibenz(a,h)anthracene	ND		ug/kg	11.2	1.15	1
Benzo(g,h,i)perylene	1.78	J	ug/kg	11.2	0.923	1
2-Methylnaphthalene	4.46	J	ug/kg	11.2	1.39	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	60		30-130
Pyrene-d10	82		30-130
Benzo(b)fluoranthene-d12	71		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-09  
 Client ID: VC-IRB-07-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 01:52  
 Analyst: GP  
 Percent Solids: 36%

Date Collected: 10/07/17 19:00  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	10.6		ug/kg	10.5	0.940	1
Acenaphthylene	1.13	J	ug/kg	10.5	0.704	1
Acenaphthene	2.98	J	ug/kg	10.5	1.18	1
Fluorene	3.56	J	ug/kg	10.5	0.702	1
Phenanthrene	9.74	J	ug/kg	10.5	1.24	1
Anthracene	2.53	J	ug/kg	10.5	1.30	1
Fluoranthene	13.1		ug/kg	10.5	1.92	1
Pyrene	13.9		ug/kg	10.5	1.07	1
Benz(a)anthracene	5.55	J	ug/kg	10.5	2.80	1
Chrysene	5.60	J	ug/kg	10.5	0.923	1
Benzo(b)fluoranthene	6.72	J	ug/kg	10.5	1.09	1
Benzo(k)fluoranthene	5.15	J	ug/kg	10.5	1.08	1
Benzo(a)pyrene	4.81	J	ug/kg	10.5	1.23	1
Indeno(1,2,3-cd)pyrene	6.24	J	ug/kg	10.5	2.99	1
Dibenz(a,h)anthracene	1.85	J	ug/kg	10.5	1.08	1
Benzo(g,h,i)perylene	5.31	J	ug/kg	10.5	0.865	1
2-Methylnaphthalene	4.90	J	ug/kg	10.5	1.30	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	56		30-130
Pyrene-d10	80		30-130
Benzo(b)fluoranthene-d12	70		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-10  
 Client ID: VC-IRB-07-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/07/17 19:10  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 02:22  
 Analyst: GP  
 Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	2.45	J	ug/kg	4.82	0.431	1
Acenaphthylene	0.455	J	ug/kg	4.82	0.323	1
Acenaphthene	0.841	J	ug/kg	4.82	0.540	1
Fluorene	ND		ug/kg	4.82	0.322	1
Phenanthrene	0.571	J	ug/kg	4.82	0.569	1
Anthracene	ND		ug/kg	4.82	0.598	1
Fluoranthene	ND		ug/kg	4.82	0.882	1
Pyrene	0.560	J	ug/kg	4.82	0.492	1
Benz(a)anthracene	ND		ug/kg	4.82	1.29	1
Chrysene	ND		ug/kg	4.82	0.424	1
Benzo(b)fluoranthene	ND		ug/kg	4.82	0.501	1
Benzo(k)fluoranthene	ND		ug/kg	4.82	0.496	1
Benzo(a)pyrene	ND		ug/kg	4.82	0.564	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	4.82	1.37	1
Dibenz(a,h)anthracene	ND		ug/kg	4.82	0.496	1
Benzo(g,h,i)perylene	ND		ug/kg	4.82	0.397	1
2-Methylnaphthalene	0.928	J	ug/kg	4.82	0.598	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	57		30-130
Pyrene-d10	72		30-130
Benzo(b)fluoranthene-d12	71		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-11  
 Client ID: VC-IRB-08-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 02:53  
 Analyst: GP  
 Percent Solids: 49%

Date Collected: 10/08/17 18:10  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	9.86		ug/kg	7.89	0.706	1
Acenaphthylene	1.72	J	ug/kg	7.89	0.529	1
Acenaphthene	1.76	J	ug/kg	7.89	0.884	1
Fluorene	2.92	J	ug/kg	7.89	0.527	1
Phenanthrene	6.36	J	ug/kg	7.89	0.931	1
Anthracene	2.54	J	ug/kg	7.89	0.978	1
Fluoranthene	10.9		ug/kg	7.89	1.44	1
Pyrene	12.0		ug/kg	7.89	0.805	1
Benz(a)anthracene	5.57	J	ug/kg	7.89	2.11	1
Chrysene	5.86	J	ug/kg	7.89	0.694	1
Benzo(b)fluoranthene	7.38	J	ug/kg	7.89	0.820	1
Benzo(k)fluoranthene	5.87	J	ug/kg	7.89	0.813	1
Benzo(a)pyrene	5.18	J	ug/kg	7.89	0.923	1
Indeno(1,2,3-cd)pyrene	6.77	J	ug/kg	7.89	2.25	1
Dibenz(a,h)anthracene	2.16	J	ug/kg	7.89	0.813	1
Benzo(g,h,i)perylene	6.53	J	ug/kg	7.89	0.650	1
2-Methylnaphthalene	6.42	J	ug/kg	7.89	0.978	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	59		30-130
Pyrene-d10	80		30-130
Benzo(b)fluoranthene-d12	71		30-130



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-12  
**Client ID:** VC-IRB-08-ALT-S2  
**Sample Location:** DELAWARE  
  
**Matrix:** Sediment  
**Analytical Method:** 1,8270D-SIM  
**Analytical Date:** 11/10/17 03:24  
**Analyst:** GP  
**Percent Solids:** 14%

**Date Collected:** 10/08/17 18:20  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 16:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Naphthalene	45.9		ug/kg	28.2	2.53	1
Acenaphthylene	ND		ug/kg	28.2	1.89	1
Acenaphthene	6.14	J	ug/kg	28.2	3.16	1
Fluorene	7.62	J	ug/kg	28.2	1.88	1
Phenanthrene	31.7		ug/kg	28.2	3.33	1
Anthracene	ND		ug/kg	28.2	3.50	1
Fluoranthene	15.1	J	ug/kg	28.2	5.17	1
Pyrene	13.7	J	ug/kg	28.2	2.88	1
Benzo(a)anthracene	ND		ug/kg	28.2	7.54	1
Chrysene	3.11	J	ug/kg	28.2	2.48	1
Benzo(b)fluoranthene	ND		ug/kg	28.2	2.94	1
Benzo(k)fluoranthene	ND		ug/kg	28.2	2.91	1
Benzo(a)pyrene	ND		ug/kg	28.2	3.30	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	28.2	8.05	1
Dibenz(a,h)anthracene	ND		ug/kg	28.2	2.91	1
Benzo(g,h,i)perylene	ND		ug/kg	28.2	2.33	1
2-Methylnaphthalene	11.4	J	ug/kg	28.2	3.50	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	51		30-130
Pyrene-d10	57		30-130
Benzo(b)fluoranthene-d12	50		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-13  
 Client ID: VC-IRB-08-ALT-S3  
 Sample Location: DELAWARE

Date Collected: 10/08/17 18:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 03:55  
 Analyst: GP  
 Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	13.9		ug/kg	4.74	0.425	1
Acenaphthylene	ND		ug/kg	4.74	0.318	1
Acenaphthene	0.634	J	ug/kg	4.74	0.532	1
Fluorene	0.446	J	ug/kg	4.74	0.317	1
Phenanthrene	0.844	J	ug/kg	4.74	0.560	1
Anthracene	ND		ug/kg	4.74	0.588	1
Fluoranthene	ND		ug/kg	4.74	0.868	1
Pyrene	0.946	J	ug/kg	4.74	0.484	1
Benz(a)anthracene	ND		ug/kg	4.74	1.27	1
Chrysene	ND		ug/kg	4.74	0.417	1
Benzo(b)fluoranthene	ND		ug/kg	4.74	0.494	1
Benzo(k)fluoranthene	ND		ug/kg	4.74	0.489	1
Benzo(a)pyrene	ND		ug/kg	4.74	0.555	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	4.74	1.35	1
Dibenz(a,h)anthracene	ND		ug/kg	4.74	0.489	1
Benzo(g,h,i)perylene	ND		ug/kg	4.74	0.391	1
2-Methylnaphthalene	3.20	J	ug/kg	4.74	0.588	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	55		30-130
Pyrene-d10	67		30-130
Benzo(b)fluoranthene-d12	63		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-14  
 Client ID: VC-IRB-09-ALT  
 Sample Location: DELAWARE

Date Collected: 10/08/17 16:00  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 04:26  
 Analyst: GP  
 Percent Solids: 45%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	3.19	J	ug/kg	8.77	0.785	1
Acenaphthylene	ND		ug/kg	8.77	0.588	1
Acenaphthene	ND		ug/kg	8.77	0.982	1
Fluorene	1.86	J	ug/kg	8.77	0.586	1
Phenanthrene	3.04	J	ug/kg	8.77	1.04	1
Anthracene	ND		ug/kg	8.77	1.09	1
Fluoranthene	2.74	J	ug/kg	8.77	1.60	1
Pyrene	2.64	J	ug/kg	8.77	0.895	1
Benz(a)anthracene	ND		ug/kg	8.77	2.34	1
Chrysene	0.929	J	ug/kg	8.77	0.771	1
Benzo(b)fluoranthene	1.42	J	ug/kg	8.77	0.912	1
Benzo(k)fluoranthene	ND		ug/kg	8.77	0.904	1
Benzo(a)pyrene	ND		ug/kg	8.77	1.03	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.77	2.50	1
Dibenz(a,h)anthracene	ND		ug/kg	8.77	0.904	1
Benzo(g,h,i)perylene	ND		ug/kg	8.77	0.723	1
2-Methylnaphthalene	ND		ug/kg	8.77	1.09	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	59		30-130
Pyrene-d10	74		30-130
Benzo(b)fluoranthene-d12	73		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-15  
 Client ID: VC-IRB-10  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 04:56  
 Analyst: GP  
 Percent Solids: 55%

Date Collected: 10/07/17 17:05  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	2.99	J	ug/kg	6.62	0.592	1
Acenaphthylene	ND		ug/kg	6.62	0.443	1
Acenaphthene	ND		ug/kg	6.62	0.741	1
Fluorene	1.09	J	ug/kg	6.62	0.442	1
Phenanthrene	2.24	J	ug/kg	6.62	0.781	1
Anthracene	ND		ug/kg	6.62	0.820	1
Fluoranthene	3.14	J	ug/kg	6.62	1.21	1
Pyrene	2.74	J	ug/kg	6.62	0.675	1
Benz(a)anthracene	ND		ug/kg	6.62	1.77	1
Chrysene	1.51	J	ug/kg	6.62	0.582	1
Benzo(b)fluoranthene	2.25	J	ug/kg	6.62	0.688	1
Benzo(k)fluoranthene	1.06	J	ug/kg	6.62	0.682	1
Benzo(a)pyrene	1.13	J	ug/kg	6.62	0.774	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	6.62	1.89	1
Dibenz(a,h)anthracene	ND		ug/kg	6.62	0.682	1
Benzo(g,h,i)perylene	ND		ug/kg	6.62	0.545	1
2-Methylnaphthalene	1.20	J	ug/kg	6.62	0.820	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	53		30-130
Pyrene-d10	68		30-130
Benzo(b)fluoranthene-d12	68		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-16  
 Client ID: VC-IRB-12-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 06:28  
 Analyst: GP  
 Percent Solids: 77%

Date Collected: 10/06/17 12:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Naphthalene	2.05	J	ug/kg	4.90	0.439	1
Acenaphthylene	ND		ug/kg	4.90	0.328	1
Acenaphthene	0.630	J	ug/kg	4.90	0.549	1
Fluorene	0.366	J	ug/kg	4.90	0.327	1
Phenanthrene	0.783	J	ug/kg	4.90	0.578	1
Anthracene	ND		ug/kg	4.90	0.608	1
Fluoranthene	ND		ug/kg	4.90	0.897	1
Pyrene	0.668	J	ug/kg	4.90	0.500	1
Benz(a)anthracene	ND		ug/kg	4.90	1.31	1
Chrysene	ND		ug/kg	4.90	0.431	1
Benzo(b)fluoranthene	ND		ug/kg	4.90	0.510	1
Benzo(k)fluoranthene	ND		ug/kg	4.90	0.505	1
Benzo(a)pyrene	ND		ug/kg	4.90	0.573	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	4.90	1.40	1
Dibenz(a,h)anthracene	1.01	J	ug/kg	4.90	0.505	1
Benzo(g,h,i)perylene	0.542	J	ug/kg	4.90	0.404	1
2-Methylnaphthalene	0.830	J	ug/kg	4.90	0.608	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	58		30-130
Pyrene-d10	67		30-130
Benzo(b)fluoranthene-d12	68		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-17  
 Client ID: VC-IRB-12-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 06:59  
 Analyst: GP  
 Percent Solids: 58%

Date Collected: 10/06/17 12:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	4.93	J	ug/kg	6.58	0.588	1
Acenaphthylene	ND		ug/kg	6.58	0.441	1
Acenaphthene	1.80	J	ug/kg	6.58	0.736	1
Fluorene	1.08	J	ug/kg	6.58	0.439	1
Phenanthrene	1.69	J	ug/kg	6.58	0.776	1
Anthracene	ND		ug/kg	6.58	0.815	1
Fluoranthene	1.81	J	ug/kg	6.58	1.20	1
Pyrene	1.79	J	ug/kg	6.58	0.671	1
Benz(a)anthracene	ND		ug/kg	6.58	1.76	1
Chrysene	0.882	J	ug/kg	6.58	0.578	1
Benzo(b)fluoranthene	0.862	J	ug/kg	6.58	0.684	1
Benzo(k)fluoranthene	ND		ug/kg	6.58	0.677	1
Benzo(a)pyrene	ND		ug/kg	6.58	0.769	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	6.58	1.87	1
Dibenz(a,h)anthracene	0.679	J	ug/kg	6.58	0.677	1
Benzo(g,h,i)perylene	0.819	J	ug/kg	6.58	0.542	1
2-Methylnaphthalene	1.54	J	ug/kg	6.58	0.815	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	59		30-130
Pyrene-d10	71		30-130
Benzo(b)fluoranthene-d12	69		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-18  
 Client ID: VC-IRB-25  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/10/17 07:30  
 Analyst: GP  
 Percent Solids: 37%

Date Collected: 10/07/17 14:45  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Naphthalene	10.4		ug/kg	10.3	0.926	1
Acenaphthylene	0.847	J	ug/kg	10.3	0.693	1
Acenaphthene	2.10	J	ug/kg	10.3	1.16	1
Fluorene	3.98	J	ug/kg	10.3	0.691	1
Phenanthrene	8.00	J	ug/kg	10.3	1.22	1
Anthracene	2.63	J	ug/kg	10.3	1.28	1
Fluoranthene	13.8		ug/kg	10.3	1.89	1
Pyrene	13.3		ug/kg	10.3	1.05	1
Benz(a)anthracene	6.26	J	ug/kg	10.3	2.76	1
Chrysene	7.18	J	ug/kg	10.3	0.909	1
Benzo(b)fluoranthene	9.77	J	ug/kg	10.3	1.08	1
Benzo(k)fluoranthene	5.44	J	ug/kg	10.3	1.06	1
Benzo(a)pyrene	6.55	J	ug/kg	10.3	1.21	1
Indeno(1,2,3-cd)pyrene	8.15	J	ug/kg	10.3	2.95	1
Dibenz(a,h)anthracene	2.10	J	ug/kg	10.3	1.06	1
Benzo(g,h,i)perylene	7.10	J	ug/kg	10.3	0.852	1
2-Methylnaphthalene	6.73	J	ug/kg	10.3	1.28	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	60		30-130
Pyrene-d10	71		30-130
Benzo(b)fluoranthene-d12	68		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8270D-SIM  
**Analytical Date:** 11/09/17 19:21  
**Analyst:** GP

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 16:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/09/17

Parameter	Result	Qualifier	Units	RL	MDL
PAHs by GC/MS-SIM - Mansfield Lab for sample(s): 01-18 Batch: WG1060106-1					
Naphthalene	2.32	J	ug/kg	4.00	0.358
Acenaphthylene	ND		ug/kg	4.00	0.268
Acenaphthene	ND		ug/kg	4.00	0.448
Fluorene	ND		ug/kg	4.00	0.267
Phenanthrene	0.481	J	ug/kg	4.00	0.472
Anthracene	ND		ug/kg	4.00	0.496
Fluoranthene	ND		ug/kg	4.00	0.732
Pyrene	ND		ug/kg	4.00	0.408
Benz(a)anthracene	ND		ug/kg	4.00	1.07
Chrysene	ND		ug/kg	4.00	0.352
Benzo(b)fluoranthene	1.38	J	ug/kg	4.00	0.416
Benzo(k)fluoranthene	ND		ug/kg	4.00	0.412
Benzo(a)pyrene	ND		ug/kg	4.00	0.468
Indeno(1,2,3-cd)pyrene	ND		ug/kg	4.00	1.14
Dibenz(a,h)anthracene	1.24	J	ug/kg	4.00	0.412
Benzo(g,h,i)perylene	0.760	J	ug/kg	4.00	0.330
2-Methylnaphthalene	1.40	J	ug/kg	4.00	0.496

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	41		30-130
Pyrene-d10	70		30-130
Benzo(b)fluoranthene-d12	82		30-130





## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736278

Report Date: 11/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-18 Batch: WG1060106-2 WG1060106-3								
Naphthalene	60		61		40-140	2		30
Acenaphthylene	71		73		40-140	3		30
Acenaphthene	60		63		40-140	5		30
Fluorene	69		76		40-140	10		30
Phenanthrene	69		79		40-140	14		30
Anthracene	71		82		40-140	14		30
Fluoranthene	76		89		40-140	16		30
Pyrene	62		74		40-140	18		30
Benz(a)anthracene	77		91		40-140	17		30
Chrysene	70		82		40-140	16		30
Benzo(b)fluoranthene	76		88		40-140	15		30
Benzo(k)fluoranthene	73		87		40-140	18		30
Benzo(a)pyrene	76		90		40-140	17		30
Indeno(1,2,3-cd)pyrene	77		95		40-140	21		30
Dibenz(a,h)anthracene	77		92		40-140	18		30
Benzo(g,h,i)perylene	77		92		40-140	18		30
2-Methylnaphthalene	66		68		40-140	3		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736278

Report Date: 11/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-18 Batch: WG1060106-2 WG1060106-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Methylnaphthalene-d10	64		64		30-130
Pyrene-d10	70		82		30-130
Benzo(b)fluoranthene-d12	77		89		30-130

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1060106-4 WG1060106-5 QC Sample: L1736278-15 Client ID: VC-IRB-10												
Naphthalene	2.99J	854	454	53		400	48		40-140	13		30
Acenaphthylene	ND	854	530	62		486	59		40-140	9		30
Acenaphthene	ND	854	461	54		422	51		40-140	9		30
Fluorene	1.09J	854	545	64		521	63		40-140	5		30
Phenanthrene	2.24J	854	566	66		544	66		40-140	4		30
Anthracene	ND	854	572	67		556	67		40-140	3		30
Fluoranthene	3.14J	854	601	70		600	73		40-140	0		30
Pyrene	2.74J	854	574	67		567	69		40-140	1		30
Benz(a)anthracene	ND	854	619	73		613	74		40-140	1		30
Chrysene	1.51J	854	571	67		566	68		40-140	1		30
Benzo(b)fluoranthene	2.25J	854	601	70		670	81		40-140	11		30
Benzo(k)fluoranthene	1.06J	854	494	58		489	59		40-140	1		30
Benzo(a)pyrene	1.13J	854	602	71		595	72		40-140	1		30
Indeno(1,2,3-cd)pyrene	ND	854	640	75		695	84		40-140	8		30
Dibenz(a,h)anthracene	ND	854	613	72		609	74		40-140	1		30
Benzo(g,h,i)perylene	ND	854	617	72		616	74		40-140	0		30
2-Methylnaphthalene	1.20J	854	509	60		456	55		40-140	11		30

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>Qualifier</i>	<i>MSD % Recovery</i>	<i>Qualifier</i>	<i>Acceptance Criteria</i>
2-Methylnaphthalene-d10	57		52		30-130
Benzo(b)fluoranthene-d12	74		73		30-130
Pyrene-d10	75		75		30-130

# PESTICIDES

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-01  
 Client ID: VC-IRB-01  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/09/17 22:18  
 Analyst: DP  
 Percent Solids: 44%

Date Collected: 10/07/17 18:20  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.440	0.440	1	A
Hexachlorobenzene	ND		ug/kg	0.880	0.880	1	A
beta-BHC	ND		ug/kg	0.440	0.440	1	A
gamma-BHC	ND		ug/kg	0.440	0.440	1	A
delta-BHC	ND		ug/kg	0.440	0.440	1	A
Heptachlor	ND		ug/kg	0.440	0.440	1	A
Aldrin	ND		ug/kg	0.440	0.440	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.880	0.880	1	B
Oxychlordane	ND		ug/kg	0.880	0.880	1	B
gamma-Chlordane	ND		ug/kg	0.440	0.440	1	A
2,4'-DDE	ND		ug/kg	0.440	0.440	1	A
Endosulfan I	ND		ug/kg	0.440	0.440	1	A
alpha-Chlordane	ND		ug/kg	0.440	0.440	1	A
trans-Nonachlor	ND		ug/kg	0.440	0.440	1	A
4,4'-DDE	ND		ug/kg	0.440	0.440	1	A
Dieldrin	ND		ug/kg	0.440	0.440	1	A
2,4'-DDD	ND		ug/kg	0.440	0.440	1	A
Endrin	ND		ug/kg	0.440	0.440	1	A
Endosulfan II	ND		ug/kg	0.440	0.440	1	A
4,4'-DDD	ND		ug/kg	0.440	0.440	1	A
2,4'-DDT	ND		ug/kg	0.440	0.440	1	A
cis-Nonachlor	ND		ug/kg	0.440	0.440	1	A
Endrin aldehyde	ND		ug/kg	1.32	1.32	1	A
Endosulfan sulfate	ND		ug/kg	0.440	0.440	1	A
4,4'-DDT	ND		ug/kg	0.440	0.440	1	A
Endrin ketone	ND		ug/kg	0.440	0.440	1	A
Methoxychlor	ND		ug/kg	4.40	4.40	1	A
Mirex	ND		ug/kg	0.440	0.440	1	A
Toxaphene	ND		ug/kg	22.1	22.1	1	A
Chlordane	ND		ug/kg	22.1	22.1	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-01  
 Client ID: VC-IRB-01  
 Sample Location: DELAWARE

Date Collected: 10/07/17 18:20  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	64		30-150	A
DCB - Surrogate	66		30-150	A
TMX - Surrogate	54		30-150	B
DCB - Surrogate	62		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-02  
 Client ID: VC-IRB-02  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/09/17 22:50  
 Analyst: DP  
 Percent Solids: 34%

Date Collected: 10/07/17 14:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.558	0.558	1	A
Hexachlorobenzene	ND		ug/kg	1.12	1.12	1	A
beta-BHC	ND		ug/kg	0.558	0.558	1	A
gamma-BHC	ND		ug/kg	0.558	0.558	1	A
delta-BHC	ND		ug/kg	0.558	0.558	1	A
Heptachlor	ND		ug/kg	0.558	0.558	1	A
Aldrin	ND		ug/kg	0.558	0.558	1	A
Heptachlor epoxide (B)	ND		ug/kg	1.12	1.12	1	B
Oxychlordane	ND		ug/kg	1.12	1.12	1	B
gamma-Chlordane	ND		ug/kg	0.558	0.558	1	A
2,4'-DDE	ND		ug/kg	0.558	0.558	1	A
Endosulfan I	ND		ug/kg	0.558	0.558	1	A
alpha-Chlordane	ND		ug/kg	0.558	0.558	1	A
trans-Nonachlor	ND		ug/kg	0.558	0.558	1	A
4,4'-DDE	ND		ug/kg	0.558	0.558	1	A
Dieldrin	ND		ug/kg	0.558	0.558	1	A
2,4'-DDD	ND		ug/kg	0.558	0.558	1	A
Endrin	ND		ug/kg	0.558	0.558	1	A
Endosulfan II	ND		ug/kg	0.558	0.558	1	A
4,4'-DDD	ND		ug/kg	0.558	0.558	1	A
2,4'-DDT	ND		ug/kg	0.558	0.558	1	A
cis-Nonachlor	ND		ug/kg	0.558	0.558	1	A
Endrin aldehyde	ND		ug/kg	1.67	1.67	1	A
Endosulfan sulfate	ND		ug/kg	0.558	0.558	1	A
4,4'-DDT	ND		ug/kg	0.558	0.558	1	A
Endrin ketone	ND		ug/kg	0.558	0.558	1	A
Methoxychlor	ND		ug/kg	5.58	5.58	1	A
Mirex	ND		ug/kg	0.558	0.558	1	A
Toxaphene	ND		ug/kg	28.0	28.0	1	A
Chlordane	ND		ug/kg	28.0	28.0	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

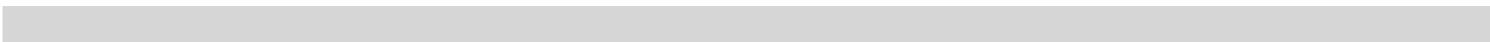
**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-02  
 Client ID: VC-IRB-02  
 Sample Location: DELAWARE

Date Collected: 10/07/17 14:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	52		30-150	A
DCB - Surrogate	45		30-150	A
TMX - Surrogate	41		30-150	B
DCB - Surrogate	42		30-150	B





**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-03  
**Client ID:** VC-IRB-03-S1  
**Sample Location:** DELAWARE  
  
**Matrix:** Sediment  
**Analytical Method:** 1,8081B  
**Analytical Date:** 11/09/17 23:23  
**Analyst:** DP  
**Percent Solids:** 60%

**Date Collected:** 10/07/17 15:40  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 16:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.311	0.311	1	A
Hexachlorobenzene	ND		ug/kg	0.621	0.621	1	A
beta-BHC	ND		ug/kg	0.311	0.311	1	A
gamma-BHC	ND		ug/kg	0.311	0.311	1	A
delta-BHC	ND		ug/kg	0.311	0.311	1	A
Heptachlor	ND		ug/kg	0.311	0.311	1	A
Aldrin	ND		ug/kg	0.311	0.311	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.621	0.621	1	B
Oxychlordane	ND		ug/kg	0.621	0.621	1	B
gamma-Chlordane	ND		ug/kg	0.311	0.311	1	A
2,4'-DDE	ND		ug/kg	0.311	0.311	1	A
Endosulfan I	ND		ug/kg	0.311	0.311	1	A
alpha-Chlordane	ND		ug/kg	0.311	0.311	1	A
trans-Nonachlor	ND		ug/kg	0.311	0.311	1	A
4,4'-DDE	ND		ug/kg	0.311	0.311	1	A
Dieldrin	ND		ug/kg	0.311	0.311	1	A
2,4'-DDD	ND		ug/kg	0.311	0.311	1	A
Endrin	ND		ug/kg	0.311	0.311	1	A
Endosulfan II	ND		ug/kg	0.311	0.311	1	A
4,4'-DDD	ND		ug/kg	0.311	0.311	1	A
2,4'-DDT	ND		ug/kg	0.311	0.311	1	A
cis-Nonachlor	ND		ug/kg	0.311	0.311	1	A
Endrin aldehyde	ND		ug/kg	0.932	0.932	1	A
Endosulfan sulfate	ND		ug/kg	0.311	0.311	1	A
4,4'-DDT	ND		ug/kg	0.311	0.311	1	A
Endrin ketone	ND		ug/kg	0.311	0.311	1	A
Methoxychlor	ND		ug/kg	3.11	3.11	1	A
Mirex	ND		ug/kg	0.311	0.311	1	A
Toxaphene	ND		ug/kg	15.6	15.6	1	A
Chlordane	ND		ug/kg	15.6	15.6	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-03  
 Client ID: VC-IRB-03-S1  
 Sample Location: DELAWARE

Date Collected: 10/07/17 15:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	51		30-150	A
DCB - Surrogate	48		30-150	A
TMX - Surrogate	42		30-150	B
DCB - Surrogate	47		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-04  
 Client ID: VC-IRB-03-S2  
 Sample Location: DELAWARE

Date Collected: 10/07/17 15:50  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/09/17 23:55  
 Analyst: DP  
 Percent Solids: 33%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.590	0.590	1	A
Hexachlorobenzene	ND		ug/kg	1.18	1.18	1	A
beta-BHC	ND		ug/kg	0.590	0.590	1	A
gamma-BHC	ND		ug/kg	0.590	0.590	1	A
delta-BHC	ND		ug/kg	0.590	0.590	1	A
Heptachlor	ND		ug/kg	0.590	0.590	1	A
Aldrin	ND		ug/kg	0.590	0.590	1	A
Heptachlor epoxide (B)	ND		ug/kg	1.18	1.18	1	B
Oxychlordane	ND		ug/kg	1.18	1.18	1	B
gamma-Chlordane	ND		ug/kg	0.590	0.590	1	A
2,4'-DDE	ND		ug/kg	0.590	0.590	1	A
Endosulfan I	ND		ug/kg	0.590	0.590	1	A
alpha-Chlordane	ND		ug/kg	0.590	0.590	1	A
trans-Nonachlor	ND		ug/kg	0.590	0.590	1	A
4,4'-DDE	ND		ug/kg	0.590	0.590	1	A
Dieldrin	ND		ug/kg	0.590	0.590	1	A
2,4'-DDD	ND		ug/kg	0.590	0.590	1	A
Endrin	0.645		ug/kg	0.590	0.590	1	A
Endosulfan II	ND		ug/kg	0.590	0.590	1	A
4,4'-DDD	ND		ug/kg	0.590	0.590	1	A
2,4'-DDT	ND		ug/kg	0.590	0.590	1	A
cis-Nonachlor	ND		ug/kg	0.590	0.590	1	A
Endrin aldehyde	ND		ug/kg	1.77	1.77	1	A
Endosulfan sulfate	ND		ug/kg	0.590	0.590	1	A
4,4'-DDT	ND		ug/kg	0.590	0.590	1	A
Endrin ketone	ND		ug/kg	0.590	0.590	1	A
Methoxychlor	ND		ug/kg	5.90	5.90	1	A
Mirex	ND		ug/kg	0.590	0.590	1	A
Toxaphene	ND		ug/kg	29.6	29.6	1	A
Chlordane	ND		ug/kg	29.6	29.6	1	A

Project Name: US WIND

Lab Number: L1736278

Project Number: U167-022

Report Date: 11/17/17

## SAMPLE RESULTS

Lab ID: L1736278-04

Date Collected: 10/07/17 15:50

Client ID: VC-IRB-03-S2

Date Received: 10/09/17

Sample Location: DELAWARE

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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## Organochlorine Pesticides by GC - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	62		30-150	A
DCB - Surrogate	56		30-150	A
TMX - Surrogate	53		30-150	B
DCB - Surrogate	53		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-05  
 Client ID: VC-IRB-04  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/10/17 00:28  
 Analyst: DP  
 Percent Solids: 46%

Date Collected: 10/06/17 18:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.408	0.408	1	A
Hexachlorobenzene	ND		ug/kg	0.816	0.816	1	A
beta-BHC	ND		ug/kg	0.408	0.408	1	A
gamma-BHC	ND		ug/kg	0.408	0.408	1	A
delta-BHC	ND		ug/kg	0.408	0.408	1	A
Heptachlor	ND		ug/kg	0.408	0.408	1	A
Aldrin	ND		ug/kg	0.408	0.408	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.816	0.816	1	B
Oxychlordane	ND		ug/kg	0.816	0.816	1	B
gamma-Chlordane	ND		ug/kg	0.408	0.408	1	A
2,4'-DDE	ND		ug/kg	0.408	0.408	1	A
Endosulfan I	ND		ug/kg	0.408	0.408	1	A
alpha-Chlordane	ND		ug/kg	0.408	0.408	1	A
trans-Nonachlor	ND		ug/kg	0.408	0.408	1	A
4,4'-DDE	ND		ug/kg	0.408	0.408	1	A
Dieldrin	ND		ug/kg	0.408	0.408	1	A
2,4'-DDD	ND		ug/kg	0.408	0.408	1	A
Endrin	ND		ug/kg	0.408	0.408	1	A
Endosulfan II	ND		ug/kg	0.408	0.408	1	A
4,4'-DDD	ND		ug/kg	0.408	0.408	1	A
2,4'-DDT	ND		ug/kg	0.408	0.408	1	A
cis-Nonachlor	ND		ug/kg	0.408	0.408	1	A
Endrin aldehyde	ND		ug/kg	1.22	1.22	1	A
Endosulfan sulfate	ND		ug/kg	0.408	0.408	1	A
4,4'-DDT	ND		ug/kg	0.408	0.408	1	A
Endrin ketone	ND		ug/kg	0.408	0.408	1	A
Methoxychlor	ND		ug/kg	4.08	4.08	1	A
Mirex	ND		ug/kg	0.408	0.408	1	A
Toxaphene	ND		ug/kg	20.5	20.5	1	A
Chlordane	ND		ug/kg	20.5	20.5	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-05  
 Client ID: VC-IRB-04  
 Sample Location: DELAWARE

Date Collected: 10/06/17 18:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	46		30-150	A
DCB - Surrogate	54		30-150	A
TMX - Surrogate	39		30-150	B
DCB - Surrogate	53		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-06  
 Client ID: VC-IRB-05-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/10/17 01:00  
 Analyst: DP  
 Percent Solids: 41%

Date Collected: 10/06/17 19:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.446	0.446	1	A
Hexachlorobenzene	ND		ug/kg	0.892	0.892	1	A
beta-BHC	ND		ug/kg	0.446	0.446	1	A
gamma-BHC	ND		ug/kg	0.446	0.446	1	A
delta-BHC	ND		ug/kg	0.446	0.446	1	A
Heptachlor	ND		ug/kg	0.446	0.446	1	A
Aldrin	ND		ug/kg	0.446	0.446	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.892	0.892	1	B
Oxychlordane	ND		ug/kg	0.892	0.892	1	B
gamma-Chlordane	ND		ug/kg	0.446	0.446	1	A
2,4'-DDE	ND		ug/kg	0.446	0.446	1	A
Endosulfan I	ND		ug/kg	0.446	0.446	1	A
alpha-Chlordane	ND		ug/kg	0.446	0.446	1	A
trans-Nonachlor	ND		ug/kg	0.446	0.446	1	A
4,4'-DDE	ND		ug/kg	0.446	0.446	1	A
Dieldrin	ND		ug/kg	0.446	0.446	1	A
2,4'-DDD	ND		ug/kg	0.446	0.446	1	A
Endrin	ND		ug/kg	0.446	0.446	1	A
Endosulfan II	ND		ug/kg	0.446	0.446	1	A
4,4'-DDD	ND		ug/kg	0.446	0.446	1	A
2,4'-DDT	ND		ug/kg	0.446	0.446	1	A
cis-Nonachlor	ND		ug/kg	0.446	0.446	1	A
Endrin aldehyde	ND		ug/kg	1.34	1.34	1	A
Endosulfan sulfate	ND		ug/kg	0.446	0.446	1	A
4,4'-DDT	ND		ug/kg	0.446	0.446	1	A
Endrin ketone	ND		ug/kg	0.446	0.446	1	A
Methoxychlor	ND		ug/kg	4.46	4.46	1	A
Mirex	ND		ug/kg	0.446	0.446	1	A
Toxaphene	ND		ug/kg	22.4	22.4	1	A
Chlordane	ND		ug/kg	22.4	22.4	1	A

Project Name: US WIND

Lab Number: L1736278

Project Number: U167-022

Report Date: 11/17/17

## SAMPLE RESULTS

Lab ID: L1736278-06

Date Collected: 10/06/17 19:30

Client ID: VC-IRB-05-S1

Date Received: 10/09/17

Sample Location: DELAWARE

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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## Organochlorine Pesticides by GC - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	61		30-150	A
DCB - Surrogate	43		30-150	A
TMX - Surrogate	51		30-150	B
DCB - Surrogate	44		30-150	B



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-07  
**Client ID:** VC-IRB-05-S2  
**Sample Location:** DELAWARE  
  
**Matrix:** Sediment  
**Analytical Method:** 1,8081B  
**Analytical Date:** 11/10/17 01:33  
**Analyst:** DP  
**Percent Solids:** 14%

**Date Collected:** 10/06/17 19:40  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 16:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	1.38	1.38	1	A
Hexachlorobenzene	ND		ug/kg	2.75	2.75	1	A
beta-BHC	ND		ug/kg	1.38	1.38	1	A
gamma-BHC	ND		ug/kg	1.38	1.38	1	A
delta-BHC	ND		ug/kg	1.38	1.38	1	A
Heptachlor	ND		ug/kg	1.38	1.38	1	A
Aldrin	ND		ug/kg	1.38	1.38	1	A
Heptachlor epoxide (B)	ND		ug/kg	2.75	2.75	1	B
Oxychlordane	ND		ug/kg	2.75	2.75	1	B
gamma-Chlordane	ND		ug/kg	1.38	1.38	1	A
2,4'-DDE	ND		ug/kg	1.38	1.38	1	A
Endosulfan I	ND		ug/kg	1.38	1.38	1	A
alpha-Chlordane	ND		ug/kg	1.38	1.38	1	A
trans-Nonachlor	ND		ug/kg	1.38	1.38	1	A
4,4'-DDE	ND		ug/kg	1.38	1.38	1	A
Dieldrin	ND		ug/kg	1.38	1.38	1	A
2,4'-DDD	ND		ug/kg	1.38	1.38	1	A
Endrin	ND		ug/kg	1.38	1.38	1	A
Endosulfan II	ND		ug/kg	1.38	1.38	1	A
4,4'-DDD	ND		ug/kg	1.38	1.38	1	A
2,4'-DDT	ND		ug/kg	1.38	1.38	1	A
cis-Nonachlor	ND		ug/kg	1.38	1.38	1	A
Endrin aldehyde	ND		ug/kg	4.13	4.13	1	A
Endosulfan sulfate	ND		ug/kg	1.38	1.38	1	A
4,4'-DDT	ND		ug/kg	1.38	1.38	1	A
Endrin ketone	ND		ug/kg	1.38	1.38	1	A
Methoxychlor	ND		ug/kg	13.8	13.8	1	A
Mirex	ND		ug/kg	1.38	1.38	1	A
Toxaphene	ND		ug/kg	69.1	69.1	1	A
Chlordane	ND		ug/kg	69.1	69.1	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-07  
 Client ID: VC-IRB-05-S2  
 Sample Location: DELAWARE

Date Collected: 10/06/17 19:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	54		30-150	A
DCB - Surrogate	51		30-150	A
TMX - Surrogate	46		30-150	B
DCB - Surrogate	50		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-08  
 Client ID: VC-IRB-06  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/10/17 02:05  
 Analyst: DP  
 Percent Solids: 33%

Date Collected: 10/06/17 20:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.560	0.560	1	A
Hexachlorobenzene	ND		ug/kg	1.12	1.12	1	A
beta-BHC	ND		ug/kg	0.560	0.560	1	A
gamma-BHC	ND		ug/kg	0.560	0.560	1	A
delta-BHC	ND		ug/kg	0.560	0.560	1	A
Heptachlor	ND		ug/kg	0.560	0.560	1	A
Aldrin	ND		ug/kg	0.560	0.560	1	A
Heptachlor epoxide (B)	ND		ug/kg	1.12	1.12	1	B
Oxychlordane	ND		ug/kg	1.12	1.12	1	B
gamma-Chlordane	ND		ug/kg	0.560	0.560	1	A
2,4'-DDE	ND		ug/kg	0.560	0.560	1	A
Endosulfan I	ND		ug/kg	0.560	0.560	1	A
alpha-Chlordane	ND		ug/kg	0.560	0.560	1	A
trans-Nonachlor	ND		ug/kg	0.560	0.560	1	A
4,4'-DDE	ND		ug/kg	0.560	0.560	1	A
Dieldrin	ND		ug/kg	0.560	0.560	1	A
2,4'-DDD	ND		ug/kg	0.560	0.560	1	A
Endrin	ND		ug/kg	0.560	0.560	1	A
Endosulfan II	ND		ug/kg	0.560	0.560	1	A
4,4'-DDD	ND		ug/kg	0.560	0.560	1	A
2,4'-DDT	ND		ug/kg	0.560	0.560	1	A
cis-Nonachlor	ND		ug/kg	0.560	0.560	1	A
Endrin aldehyde	ND		ug/kg	1.68	1.68	1	A
Endosulfan sulfate	ND		ug/kg	0.560	0.560	1	A
4,4'-DDT	ND		ug/kg	0.560	0.560	1	A
Endrin ketone	ND		ug/kg	0.560	0.560	1	A
Methoxychlor	ND		ug/kg	5.60	5.60	1	A
Mirex	ND		ug/kg	0.560	0.560	1	A
Toxaphene	ND		ug/kg	28.1	28.1	1	A
Chlordane	ND		ug/kg	28.1	28.1	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-08  
 Client ID: VC-IRB-06  
 Sample Location: DELAWARE

Date Collected: 10/06/17 20:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	63		30-150	A
DCB - Surrogate	46		30-150	A
TMX - Surrogate	54		30-150	B
DCB - Surrogate	49		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-09  
**Client ID:** VC-IRB-07-ALT-S1  
**Sample Location:** DELAWARE  
  
**Matrix:** Sediment  
**Analytical Method:** 1,8081B  
**Analytical Date:** 11/10/17 02:37  
**Analyst:** DP  
**Percent Solids:** 36%

**Date Collected:** 10/07/17 19:00  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 16:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.521	0.521	1	A
Hexachlorobenzene	ND		ug/kg	1.04	1.04	1	A
beta-BHC	ND		ug/kg	0.521	0.521	1	A
gamma-BHC	ND		ug/kg	0.521	0.521	1	A
delta-BHC	ND		ug/kg	0.521	0.521	1	A
Heptachlor	ND		ug/kg	0.521	0.521	1	A
Aldrin	ND		ug/kg	0.521	0.521	1	A
Heptachlor epoxide (B)	ND		ug/kg	1.04	1.04	1	B
Oxychlordane	ND		ug/kg	1.04	1.04	1	B
gamma-Chlordane	ND		ug/kg	0.521	0.521	1	A
2,4'-DDE	ND		ug/kg	0.521	0.521	1	A
Endosulfan I	ND		ug/kg	0.521	0.521	1	A
alpha-Chlordane	ND		ug/kg	0.521	0.521	1	A
trans-Nonachlor	ND		ug/kg	0.521	0.521	1	A
4,4'-DDE	ND		ug/kg	0.521	0.521	1	A
Dieldrin	ND		ug/kg	0.521	0.521	1	A
2,4'-DDD	ND		ug/kg	0.521	0.521	1	A
Endrin	ND		ug/kg	0.521	0.521	1	A
Endosulfan II	ND		ug/kg	0.521	0.521	1	A
4,4'-DDD	ND		ug/kg	0.521	0.521	1	A
2,4'-DDT	ND		ug/kg	0.521	0.521	1	A
cis-Nonachlor	ND		ug/kg	0.521	0.521	1	A
Endrin aldehyde	ND		ug/kg	1.56	1.56	1	A
Endosulfan sulfate	ND		ug/kg	0.521	0.521	1	A
4,4'-DDT	ND		ug/kg	0.521	0.521	1	A
Endrin ketone	ND		ug/kg	0.521	0.521	1	A
Methoxychlor	ND		ug/kg	5.21	5.21	1	A
Mirex	ND		ug/kg	0.521	0.521	1	A
Toxaphene	ND		ug/kg	26.1	26.1	1	A
Chlordane	ND		ug/kg	26.1	26.1	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-09  
 Client ID: VC-IRB-07-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/07/17 19:00  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	68		30-150	A
DCB - Surrogate	50		30-150	A
TMX - Surrogate	55		30-150	B
DCB - Surrogate	51		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-10  
 Client ID: VC-IRB-07-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/07/17 19:10  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/09/17 19:03  
 Analyst: DP  
 Percent Solids: 78%

Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.235	0.235	1	A
Hexachlorobenzene	ND		ug/kg	0.470	0.470	1	A
beta-BHC	ND		ug/kg	0.235	0.235	1	A
gamma-BHC	ND		ug/kg	0.235	0.235	1	A
delta-BHC	ND		ug/kg	0.235	0.235	1	A
Heptachlor	ND		ug/kg	0.235	0.235	1	A
Aldrin	ND		ug/kg	0.235	0.235	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.470	0.470	1	B
Oxychlordane	ND		ug/kg	0.470	0.470	1	B
gamma-Chlordane	ND		ug/kg	0.235	0.235	1	B
2,4'-DDE	ND		ug/kg	0.235	0.235	1	A
Endosulfan I	ND		ug/kg	0.235	0.235	1	A
alpha-Chlordane	ND		ug/kg	0.235	0.235	1	A
trans-Nonachlor	ND		ug/kg	0.235	0.235	1	A
4,4'-DDE	ND		ug/kg	0.235	0.235	1	A
Dieldrin	ND		ug/kg	0.235	0.235	1	A
2,4'-DDD	ND		ug/kg	0.235	0.235	1	A
Endrin	ND		ug/kg	0.235	0.235	1	A
Endosulfan II	ND		ug/kg	0.235	0.235	1	A
4,4'-DDD	ND		ug/kg	0.235	0.235	1	A
2,4'-DDT	ND		ug/kg	0.235	0.235	1	A
cis-Nonachlor	ND		ug/kg	0.235	0.235	1	A
Endrin aldehyde	ND		ug/kg	0.705	0.705	1	A
Endosulfan sulfate	ND		ug/kg	0.235	0.235	1	A
4,4'-DDT	ND		ug/kg	0.235	0.235	1	A
Endrin ketone	ND		ug/kg	0.235	0.235	1	A
Methoxychlor	ND		ug/kg	2.35	2.35	1	A
Mirex	ND		ug/kg	0.235	0.235	1	A
Toxaphene	ND		ug/kg	11.8	11.8	1	A
Chlordane	ND		ug/kg	11.8	11.8	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-10  
 Client ID: VC-IRB-07-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/07/17 19:10  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	53		30-150	A
DCB - Surrogate	64		30-150	A
TMX - Surrogate	45		30-150	B
DCB - Surrogate	58		30-150	B



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-11  
 Client ID: VC-IRB-08-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/10/17 03:10  
 Analyst: DP  
 Percent Solids: 49%

Date Collected: 10/08/17 18:10  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.388	0.388	1	A
Hexachlorobenzene	ND		ug/kg	0.776	0.776	1	A
beta-BHC	ND		ug/kg	0.388	0.388	1	A
gamma-BHC	ND		ug/kg	0.388	0.388	1	A
delta-BHC	ND		ug/kg	0.388	0.388	1	A
Heptachlor	ND		ug/kg	0.388	0.388	1	A
Aldrin	ND		ug/kg	0.388	0.388	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.776	0.776	1	B
Oxychlordane	ND		ug/kg	0.776	0.776	1	B
gamma-Chlordane	ND		ug/kg	0.388	0.388	1	A
2,4'-DDE	ND		ug/kg	0.388	0.388	1	A
Endosulfan I	ND		ug/kg	0.388	0.388	1	A
alpha-Chlordane	ND		ug/kg	0.388	0.388	1	A
trans-Nonachlor	ND		ug/kg	0.388	0.388	1	A
4,4'-DDE	ND		ug/kg	0.388	0.388	1	A
Dieldrin	ND		ug/kg	0.388	0.388	1	A
2,4'-DDD	ND		ug/kg	0.388	0.388	1	A
Endrin	ND		ug/kg	0.388	0.388	1	A
Endosulfan II	ND		ug/kg	0.388	0.388	1	A
4,4'-DDD	ND		ug/kg	0.388	0.388	1	A
2,4'-DDT	ND		ug/kg	0.388	0.388	1	A
cis-Nonachlor	ND		ug/kg	0.388	0.388	1	A
Endrin aldehyde	ND		ug/kg	1.16	1.16	1	A
Endosulfan sulfate	ND		ug/kg	0.388	0.388	1	A
4,4'-DDT	ND		ug/kg	0.388	0.388	1	A
Endrin ketone	ND		ug/kg	0.388	0.388	1	A
Methoxychlor	ND		ug/kg	3.88	3.88	1	A
Mirex	ND		ug/kg	0.388	0.388	1	A
Toxaphene	ND		ug/kg	19.5	19.5	1	A
Chlordane	ND		ug/kg	19.5	19.5	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-11  
 Client ID: VC-IRB-08-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/08/17 18:10  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	57		30-150	A
DCB - Surrogate	53		30-150	A
TMX - Surrogate	48		30-150	B
DCB - Surrogate	52		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-12  
 Client ID: VC-IRB-08-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/08/17 18:20  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/09/17 19:36  
 Analyst: DP  
 Percent Solids: 14%

Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	1.30	1.30	1	A
Hexachlorobenzene	ND		ug/kg	2.61	2.61	1	A
beta-BHC	ND		ug/kg	1.30	1.30	1	A
gamma-BHC	ND		ug/kg	1.30	1.30	1	A
delta-BHC	ND		ug/kg	1.30	1.30	1	A
Heptachlor	ND		ug/kg	1.30	1.30	1	A
Aldrin	ND		ug/kg	1.30	1.30	1	A
Heptachlor epoxide (B)	ND		ug/kg	2.61	2.61	1	B
Oxychlordane	ND		ug/kg	2.61	2.61	1	B
gamma-Chlordane	ND		ug/kg	1.30	1.30	1	A
2,4'-DDE	ND		ug/kg	1.30	1.30	1	A
Endosulfan I	ND		ug/kg	1.30	1.30	1	A
alpha-Chlordane	ND		ug/kg	1.30	1.30	1	A
trans-Nonachlor	ND		ug/kg	1.30	1.30	1	A
4,4'-DDE	ND		ug/kg	1.30	1.30	1	A
Dieldrin	ND		ug/kg	1.30	1.30	1	B
2,4'-DDD	ND		ug/kg	1.30	1.30	1	A
Endrin	ND		ug/kg	1.30	1.30	1	B
Endosulfan II	ND		ug/kg	1.30	1.30	1	A
4,4'-DDD	ND		ug/kg	1.30	1.30	1	A
2,4'-DDT	ND		ug/kg	1.30	1.30	1	A
cis-Nonachlor	ND		ug/kg	1.30	1.30	1	A
Endrin aldehyde	ND		ug/kg	3.91	3.91	1	A
Endosulfan sulfate	ND		ug/kg	1.30	1.30	1	A
4,4'-DDT	ND		ug/kg	1.30	1.30	1	B
Endrin ketone	ND		ug/kg	1.30	1.30	1	A
Methoxychlor	ND		ug/kg	13.0	13.0	1	A
Mirex	ND		ug/kg	1.30	1.30	1	A
Toxaphene	ND		ug/kg	65.4	65.4	1	A
Chlordane	ND		ug/kg	65.4	65.4	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-12  
 Client ID: VC-IRB-08-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/08/17 18:20  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	55		30-150	A
DCB - Surrogate	55		30-150	A
TMX - Surrogate	48		30-150	B
DCB - Surrogate	53		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-13  
 Client ID: VC-IRB-08-ALT-S3  
 Sample Location: DELAWARE

Date Collected: 10/08/17 18:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/10/17 03:42  
 Analyst: DP  
 Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.232	0.232	1	A
Hexachlorobenzene	ND		ug/kg	0.465	0.465	1	A
beta-BHC	ND		ug/kg	0.232	0.232	1	A
gamma-BHC	ND		ug/kg	0.232	0.232	1	A
delta-BHC	ND		ug/kg	0.232	0.232	1	A
Heptachlor	ND		ug/kg	0.232	0.232	1	A
Aldrin	ND		ug/kg	0.232	0.232	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.465	0.465	1	B
Oxychlordane	ND		ug/kg	0.465	0.465	1	B
gamma-Chlordane	ND		ug/kg	0.232	0.232	1	A
2,4'-DDE	ND		ug/kg	0.232	0.232	1	A
Endosulfan I	ND		ug/kg	0.232	0.232	1	A
alpha-Chlordane	ND		ug/kg	0.232	0.232	1	B
trans-Nonachlor	ND		ug/kg	0.232	0.232	1	A
4,4'-DDE	ND		ug/kg	0.232	0.232	1	A
Dieldrin	ND		ug/kg	0.232	0.232	1	A
2,4'-DDD	ND		ug/kg	0.232	0.232	1	A
Endrin	ND		ug/kg	0.232	0.232	1	A
Endosulfan II	ND		ug/kg	0.232	0.232	1	A
4,4'-DDD	ND		ug/kg	0.232	0.232	1	A
2,4'-DDT	ND		ug/kg	0.232	0.232	1	A
cis-Nonachlor	ND		ug/kg	0.232	0.232	1	A
Endrin aldehyde	ND		ug/kg	0.697	0.697	1	A
Endosulfan sulfate	ND		ug/kg	0.232	0.232	1	A
4,4'-DDT	ND		ug/kg	0.232	0.232	1	A
Endrin ketone	ND		ug/kg	0.232	0.232	1	A
Methoxychlor	ND		ug/kg	2.32	2.32	1	A
Mirex	ND		ug/kg	0.232	0.232	1	A
Toxaphene	ND		ug/kg	11.7	11.7	1	A
Chlordane	ND		ug/kg	11.7	11.7	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-13  
 Client ID: VC-IRB-08-ALT-S3  
 Sample Location: DELAWARE

Date Collected: 10/08/17 18:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	65		30-150	A
DCB - Surrogate	79		30-150	A
TMX - Surrogate	53		30-150	B
DCB - Surrogate	75		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-14  
**Client ID:** VC-IRB-09-ALT  
**Sample Location:** DELAWARE  
  
**Matrix:** Sediment  
**Analytical Method:** 1,8081B  
**Analytical Date:** 11/10/17 04:15  
**Analyst:** DP  
**Percent Solids:** 45%

**Date Collected:** 10/08/17 16:00  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 16:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.434	0.434	1	A
Hexachlorobenzene	ND		ug/kg	0.869	0.869	1	A
beta-BHC	ND		ug/kg	0.434	0.434	1	A
gamma-BHC	ND		ug/kg	0.434	0.434	1	A
delta-BHC	ND		ug/kg	0.434	0.434	1	A
Heptachlor	ND		ug/kg	0.434	0.434	1	A
Aldrin	ND		ug/kg	0.434	0.434	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.869	0.869	1	B
Oxychlordane	ND		ug/kg	0.869	0.869	1	B
gamma-Chlordane	ND		ug/kg	0.434	0.434	1	A
2,4'-DDE	ND		ug/kg	0.434	0.434	1	A
Endosulfan I	ND		ug/kg	0.434	0.434	1	A
alpha-Chlordane	ND		ug/kg	0.434	0.434	1	A
trans-Nonachlor	ND		ug/kg	0.434	0.434	1	A
4,4'-DDE	ND		ug/kg	0.434	0.434	1	A
Dieldrin	ND		ug/kg	0.434	0.434	1	A
2,4'-DDD	ND		ug/kg	0.434	0.434	1	A
Endrin	ND		ug/kg	0.434	0.434	1	A
Endosulfan II	ND		ug/kg	0.434	0.434	1	A
4,4'-DDD	ND		ug/kg	0.434	0.434	1	A
2,4'-DDT	ND		ug/kg	0.434	0.434	1	A
cis-Nonachlor	ND		ug/kg	0.434	0.434	1	A
Endrin aldehyde	ND		ug/kg	1.30	1.30	1	A
Endosulfan sulfate	ND		ug/kg	0.434	0.434	1	A
4,4'-DDT	ND		ug/kg	0.434	0.434	1	A
Endrin ketone	ND		ug/kg	0.434	0.434	1	A
Methoxychlor	ND		ug/kg	4.34	4.34	1	A
Mirex	ND		ug/kg	0.434	0.434	1	A
Toxaphene	ND		ug/kg	21.8	21.8	1	A
Chlordane	ND		ug/kg	21.8	21.8	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-14  
 Client ID: VC-IRB-09-ALT  
 Sample Location: DELAWARE

Date Collected: 10/08/17 16:00  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	64		30-150	A
DCB - Surrogate	71		30-150	A
TMX - Surrogate	56		30-150	B
DCB - Surrogate	68		30-150	B



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-15  
 Client ID: VC-IRB-10  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/10/17 04:47  
 Analyst: DP  
 Percent Solids: 55%

Date Collected: 10/07/17 17:05  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.351	0.351	1	A
Hexachlorobenzene	ND		ug/kg	0.702	0.702	1	A
beta-BHC	ND		ug/kg	0.351	0.351	1	A
gamma-BHC	ND		ug/kg	0.351	0.351	1	A
delta-BHC	ND		ug/kg	0.351	0.351	1	A
Heptachlor	ND		ug/kg	0.351	0.351	1	A
Aldrin	ND		ug/kg	0.351	0.351	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.702	0.702	1	B
Oxychlordane	ND		ug/kg	0.702	0.702	1	B
gamma-Chlordane	ND		ug/kg	0.351	0.351	1	A
2,4'-DDE	ND		ug/kg	0.351	0.351	1	A
Endosulfan I	ND		ug/kg	0.351	0.351	1	A
alpha-Chlordane	ND		ug/kg	0.351	0.351	1	A
trans-Nonachlor	ND		ug/kg	0.351	0.351	1	A
4,4'-DDE	ND		ug/kg	0.351	0.351	1	A
Dieldrin	ND		ug/kg	0.351	0.351	1	A
2,4'-DDD	ND		ug/kg	0.351	0.351	1	A
Endrin	ND		ug/kg	0.351	0.351	1	A
Endosulfan II	ND		ug/kg	0.351	0.351	1	A
4,4'-DDD	ND		ug/kg	0.351	0.351	1	A
2,4'-DDT	ND		ug/kg	0.351	0.351	1	A
cis-Nonachlor	ND		ug/kg	0.351	0.351	1	A
Endrin aldehyde	ND		ug/kg	1.05	1.05	1	A
Endosulfan sulfate	ND		ug/kg	0.351	0.351	1	A
4,4'-DDT	ND		ug/kg	0.351	0.351	1	A
Endrin ketone	ND		ug/kg	0.351	0.351	1	A
Methoxychlor	ND		ug/kg	3.51	3.51	1	A
Mirex	ND		ug/kg	0.351	0.351	1	A
Toxaphene	ND		ug/kg	17.6	17.6	1	A
Chlordane	ND		ug/kg	17.6	17.6	1	A

Project Name: US WIND

Lab Number: L1736278

Project Number: U167-022

Report Date: 11/17/17

## SAMPLE RESULTS

Lab ID: L1736278-15

Date Collected: 10/07/17 17:05

Client ID: VC-IRB-10

Date Received: 10/09/17

Sample Location: DELAWARE

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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## Organochlorine Pesticides by GC - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	59		30-150	A
DCB - Surrogate	66		30-150	A
TMX - Surrogate	52		30-150	B
DCB - Surrogate	66		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-16  
 Client ID: VC-IRB-12-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/09/17 20:08  
 Analyst: DP  
 Percent Solids: 77%

Date Collected: 10/06/17 12:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.245	0.245	1	A
Hexachlorobenzene	ND		ug/kg	0.490	0.490	1	A
beta-BHC	ND		ug/kg	0.245	0.245	1	A
gamma-BHC	ND		ug/kg	0.245	0.245	1	A
delta-BHC	ND		ug/kg	0.245	0.245	1	A
Heptachlor	ND		ug/kg	0.245	0.245	1	A
Aldrin	ND		ug/kg	0.245	0.245	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.490	0.490	1	B
Oxychlordane	ND		ug/kg	0.490	0.490	1	B
gamma-Chlordane	ND		ug/kg	0.245	0.245	1	A
2,4'-DDE	ND		ug/kg	0.245	0.245	1	A
Endosulfan I	ND		ug/kg	0.245	0.245	1	A
alpha-Chlordane	ND		ug/kg	0.245	0.245	1	A
trans-Nonachlor	ND		ug/kg	0.245	0.245	1	A
4,4'-DDE	ND		ug/kg	0.245	0.245	1	A
Dieldrin	ND		ug/kg	0.245	0.245	1	A
2,4'-DDD	ND		ug/kg	0.245	0.245	1	A
Endrin	ND		ug/kg	0.245	0.245	1	A
Endosulfan II	ND		ug/kg	0.245	0.245	1	A
4,4'-DDD	ND		ug/kg	0.245	0.245	1	A
2,4'-DDT	ND		ug/kg	0.245	0.245	1	A
cis-Nonachlor	ND		ug/kg	0.245	0.245	1	A
Endrin aldehyde	ND		ug/kg	0.735	0.735	1	A
Endosulfan sulfate	ND		ug/kg	0.245	0.245	1	A
4,4'-DDT	ND		ug/kg	0.245	0.245	1	A
Endrin ketone	ND		ug/kg	0.245	0.245	1	A
Methoxychlor	ND		ug/kg	2.45	2.45	1	A
Mirex	ND		ug/kg	0.245	0.245	1	A
Toxaphene	ND		ug/kg	12.3	12.3	1	A
Chlordane	ND		ug/kg	12.3	12.3	1	A

Project Name: US WIND

Lab Number: L1736278

Project Number: U167-022

Report Date: 11/17/17

## SAMPLE RESULTS

Lab ID: L1736278-16

Date Collected: 10/06/17 12:30

Client ID: VC-IRB-12-S1

Date Received: 10/09/17

Sample Location: DELAWARE

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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## Organochlorine Pesticides by GC - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	57		30-150	A
DCB - Surrogate	62		30-150	A
TMX - Surrogate	51		30-150	B
DCB - Surrogate	65		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-17  
 Client ID: VC-IRB-12-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/10/17 06:25  
 Analyst: DP  
 Percent Solids: 58%

Date Collected: 10/06/17 12:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.330	0.330	1	A
Hexachlorobenzene	ND		ug/kg	0.661	0.661	1	A
beta-BHC	ND		ug/kg	0.330	0.330	1	A
gamma-BHC	ND		ug/kg	0.330	0.330	1	A
delta-BHC	ND		ug/kg	0.330	0.330	1	A
Heptachlor	ND		ug/kg	0.330	0.330	1	A
Aldrin	ND		ug/kg	0.330	0.330	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.661	0.661	1	B
Oxychlordane	ND		ug/kg	0.661	0.661	1	B
gamma-Chlordane	ND		ug/kg	0.330	0.330	1	A
2,4'-DDE	ND		ug/kg	0.330	0.330	1	A
Endosulfan I	ND		ug/kg	0.330	0.330	1	A
alpha-Chlordane	ND		ug/kg	0.330	0.330	1	A
trans-Nonachlor	ND		ug/kg	0.330	0.330	1	A
4,4'-DDE	ND		ug/kg	0.330	0.330	1	A
Dieldrin	ND		ug/kg	0.330	0.330	1	A
2,4'-DDD	ND		ug/kg	0.330	0.330	1	A
Endrin	ND		ug/kg	0.330	0.330	1	A
Endosulfan II	ND		ug/kg	0.330	0.330	1	A
4,4'-DDD	ND		ug/kg	0.330	0.330	1	A
2,4'-DDT	ND		ug/kg	0.330	0.330	1	A
cis-Nonachlor	ND		ug/kg	0.330	0.330	1	A
Endrin aldehyde	ND		ug/kg	0.991	0.991	1	A
Endosulfan sulfate	ND		ug/kg	0.330	0.330	1	A
4,4'-DDT	ND		ug/kg	0.330	0.330	1	A
Endrin ketone	ND		ug/kg	0.330	0.330	1	A
Methoxychlor	ND		ug/kg	3.30	3.30	1	A
Mirex	ND		ug/kg	0.330	0.330	1	A
Toxaphene	ND		ug/kg	16.6	16.6	1	A
Chlordane	ND		ug/kg	16.6	16.6	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-17  
 Client ID: VC-IRB-12-S2  
 Sample Location: DELAWARE

Date Collected: 10/06/17 12:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	58		30-150	A
DCB - Surrogate	70		30-150	A
TMX - Surrogate	50		30-150	B
DCB - Surrogate	68		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-18  
 Client ID: VC-IRB-25  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/10/17 06:57  
 Analyst: DP  
 Percent Solids: 37%

Date Collected: 10/07/17 14:45  
 Date Received: 10/09/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 16:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.504	0.504	1	A
Hexachlorobenzene	ND		ug/kg	1.01	1.01	1	A
beta-BHC	ND		ug/kg	0.504	0.504	1	A
gamma-BHC	ND		ug/kg	0.504	0.504	1	A
delta-BHC	ND		ug/kg	0.504	0.504	1	A
Heptachlor	ND		ug/kg	0.504	0.504	1	A
Aldrin	ND		ug/kg	0.504	0.504	1	A
Heptachlor epoxide (B)	ND		ug/kg	1.01	1.01	1	B
Oxychlorodane	ND		ug/kg	1.01	1.01	1	B
gamma-Chlordane	ND		ug/kg	0.504	0.504	1	A
2,4'-DDE	ND		ug/kg	0.504	0.504	1	A
Endosulfan I	ND		ug/kg	0.504	0.504	1	A
alpha-Chlordane	ND		ug/kg	0.504	0.504	1	A
trans-Nonachlor	ND		ug/kg	0.504	0.504	1	A
4,4'-DDE	ND		ug/kg	0.504	0.504	1	A
Dieldrin	ND		ug/kg	0.504	0.504	1	A
2,4'-DDD	ND		ug/kg	0.504	0.504	1	A
Endrin	ND		ug/kg	0.504	0.504	1	A
Endosulfan II	ND		ug/kg	0.504	0.504	1	A
4,4'-DDD	ND		ug/kg	0.504	0.504	1	A
2,4'-DDT	ND		ug/kg	0.504	0.504	1	A
cis-Nonachlor	ND		ug/kg	0.504	0.504	1	A
Endrin aldehyde	ND		ug/kg	1.51	1.51	1	A
Endosulfan sulfate	ND		ug/kg	0.504	0.504	1	A
4,4'-DDT	ND		ug/kg	0.504	0.504	1	A
Endrin ketone	ND		ug/kg	0.504	0.504	1	A
Methoxychlor	ND		ug/kg	5.04	5.04	1	A
Mirex	ND		ug/kg	0.504	0.504	1	A
Toxaphene	ND		ug/kg	25.3	25.3	1	A
Chlordane	ND		ug/kg	25.3	25.3	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-18  
 Client ID: VC-IRB-25  
 Sample Location: DELAWARE

Date Collected: 10/07/17 14:45  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	56		30-150	A
DCB - Surrogate	54		30-150	A
TMX - Surrogate	48		30-150	B
DCB - Surrogate	50		30-150	B



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8081B  
**Analytical Date:** 11/09/17 17:26  
**Analyst:** DP

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 16:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-18 Batch: WG1060109-1						
alpha-BHC	ND		ug/kg	0.200	0.200	A
Hexachlorobenzene	ND		ug/kg	0.400	0.400	A
beta-BHC	ND		ug/kg	0.200	0.200	A
gamma-BHC	ND		ug/kg	0.200	0.200	A
delta-BHC	ND		ug/kg	0.200	0.200	A
Heptachlor	ND		ug/kg	0.200	0.200	A
Aldrin	ND		ug/kg	0.200	0.200	A
gamma-Chlordane	ND		ug/kg	0.200	0.200	A
2,4'-DDE	ND		ug/kg	0.200	0.200	A
Endosulfan I	ND		ug/kg	0.200	0.200	A
alpha-Chlordane	ND		ug/kg	0.200	0.200	A
trans-Nonachlor	ND		ug/kg	0.200	0.200	A
4,4'-DDE	ND		ug/kg	0.200	0.200	A
Dieldrin	ND		ug/kg	0.200	0.200	A
2,4'-DDD	ND		ug/kg	0.200	0.200	A
Endrin	ND		ug/kg	0.200	0.200	A
Endosulfan II	ND		ug/kg	0.200	0.200	A
4,4'-DDD	ND		ug/kg	0.200	0.200	A
2,4'-DDT	ND		ug/kg	0.200	0.200	A
cis-Nonachlor	ND		ug/kg	0.200	0.200	A
Endrin aldehyde	ND		ug/kg	0.600	0.600	A
Endosulfan sulfate	ND		ug/kg	0.200	0.200	A
4,4'-DDT	ND		ug/kg	0.200	0.200	A
Endrin ketone	ND		ug/kg	0.200	0.200	A
Methoxychlor	ND		ug/kg	2.00	2.00	A
Mirex	ND		ug/kg	0.200	0.200	A
Toxaphene	ND		ug/kg	10.0	10.0	A
Chlordane	ND		ug/kg	10.0	10.0	A
Heptachlor epoxide (B)	ND		ug/kg	0.400	0.400	B



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8081B  
**Analytical Date:** 11/09/17 17:26  
**Analyst:** DP

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 16:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-18 Batch: WG1060109-1						
Oxychlorane	ND		ug/kg	0.400	0.400	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	55		30-150	A
DCB - Surrogate	68		30-150	A
TMX - Surrogate	48		30-150	B
DCB - Surrogate	63		30-150	B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Lab Number: L1736278

Project Number: U167-022

Report Date: 11/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-18 Batch: WG1060109-2 WG1060109-3									
alpha-BHC	68		68		40-140	0		50	A
Hexachlorobenzene	60		60		40-140	0		50	A
beta-BHC	62		62		40-140	0		50	A
gamma-BHC	67		64		40-140	5		50	A
delta-BHC	75		75		40-140	0		50	A
Heptachlor	64		62		40-140	3		50	A
Aldrin	65		63		40-140	3		50	A
gamma-Chlordane	69		67		40-140	3		50	A
2,4'-DDE	66		65		40-140	2		50	A
Endosulfan I	66		66		40-140	0		50	A
alpha-Chlordane	66		64		40-140	3		50	A
trans-Nonachlor	67		65		40-140	3		50	A
4,4'-DDE	69		67		40-140	3		50	A
Dieldrin	71		72		40-140	1		50	A
2,4'-DDD	64		63		40-140	2		50	A
Endrin	61		65		40-140	6		50	A
Endosulfan II	64		66		40-140	3		50	A
4,4'-DDD	67		66		40-140	2		50	A
2,4'-DDT	71		70		40-140	1		50	A
cis-Nonachlor	66		65		40-140	2		50	A
Endrin aldehyde	53		53		40-140	0		50	A
Endosulfan sulfate	70		70		40-140	0		50	A
4,4'-DDT	76		74		40-140	3		50	A

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-18 Batch: WG1060109-2 WG1060109-3								
Endrin ketone	81		80		40-140	1	50	A
Methoxychlor	68		72		40-140	6	50	A
Mirex	62		60		40-140	3	50	A

Surrogate	LCS		LCSD		Acceptance Criteria	Column
	%Recovery	Qual	%Recovery	Qual		
TMX - Surrogate	57		57		30-150	A
DCB - Surrogate	74		70		30-150	A
TMX - Surrogate	48		49		30-150	B
DCB - Surrogate	70		66		30-150	B

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>	<b>Column</b>
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-18 Batch: WG1060109-2 WG1060109-3									
Heptachlor epoxide (B)	57		57		40-140	0		50	B
Oxychlorane	58		56		40-140	4		50	B

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>	<b>Column</b>
TMX - Surrogate	57		57		30-150	A
DCB - Surrogate	74		70		30-150	A
TMX - Surrogate	48		49		30-150	B
DCB - Surrogate	70		66		30-150	B

## Matrix Spike Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>	<i>Column</i>
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1060109-4 WG1060109-5 QC Sample: L1736278-15 Client ID: VC-IRB-10													
alpha-BHC	ND	84.6	67.9	80		62.1	71		40-140	9		50	A
Hexachlorobenzene	ND	84.6	60.1	71		55.4	63		40-140	8		50	A
beta-BHC	ND	84.6	76.9P	91		75.3P	86		40-140	2		50	A
gamma-BHC	ND	84.6	61.4	73		58.1	67		40-140	6		50	A
delta-BHC	ND	84.6	71.0	84		67.5	77		40-140	5		50	A
Heptachlor	ND	84.6	60.2	71		57.3	66		40-140	5		50	A
Aldrin	ND	84.6	63.4	75		58.7	67		40-140	8		50	A
Heptachlor epoxide (B)	ND	84.6	55.0	65		52.8	61		40-140	4		50	B
Oxychlorane	ND	84.6	54.8	65		52.8	61		40-140	4		50	B
gamma-Chlordane	ND	84.6	63.3	75		61.1	70		40-140	4		50	A
2,4'-DDE	ND	84.6	61.4	73		59.0	68		40-140	4		50	A
Endosulfan I	ND	84.6	60.7	72		58.4	67		40-140	4		50	A
alpha-Chlordane	ND	84.6	60.5	72		58.0	66		40-140	4		50	A
trans-Nonachlor	ND	84.6	61.3	73		57.8	66		40-140	6		50	A
4,4'-DDE	ND	84.6	65.1	77		62.3	71		40-140	4		50	A
Dieldrin	ND	84.6	65.9	78		63.4	73		40-140	4		50	A
2,4'-DDD	ND	84.6	62.6	74		60.8	70		40-140	3		50	A
Endrin	ND	84.6	62.9	74		59.8	69		40-140	5		50	A
Endosulfan II	ND	84.6	60.7	72		60.4	69		40-140	0		50	A
4,4'-DDD	ND	84.6	62.7	74		61.9	71		40-140	1		50	A
2,4'-DDT	ND	84.6	64.4	76		64.5	74		40-140	0		50	A
cis-Nonachlor	ND	84.6	61.2	72		60.7	70		40-140	1		50	A
Endrin aldehyde	ND	84.6	51.0	60		49.8	57		40-140	2		50	A

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1060109-4 WG1060109-5 QC Sample: L1736278-15 Client ID: VC-IRB-10												
Endosulfan sulfate	ND	84.6	65.0	77		64.7	74		40-140	0		50 A
4,4'-DDT	ND	84.6	65.4	77		63.2	72		40-140	3		50 A
Endrin ketone	ND	84.6	73.6	87		73.4	84		40-140	0		50 A
Methoxychlor	ND	84.6	63.8	75		62.7	72		40-140	2		50 A
Mirex	ND	84.6	55.9	66		53.8	62		40-140	4		50 A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
DCB - Surrogate	72		69		30-150	A
TMX - Surrogate	66		58		30-150	A
DCB - Surrogate	69		67		30-150	B
TMX - Surrogate	56		51		30-150	B



## METALS



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-01  
 Client ID: VC-IRB-01  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 44%

Date Collected: 10/07/17 18:20  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	11100		mg/kg	43.8	6.48	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Antimony, Total	0.102	J	mg/kg	0.700	0.059	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Arsenic, Total	5.86		mg/kg	0.219	0.029	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Barium, Total	32.0		mg/kg	1.31	0.092	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Beryllium, Total	0.734		mg/kg	0.131	0.038	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Cadmium, Total	0.078	J	mg/kg	0.088	0.012	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Calcium, Total	1390		mg/kg	219	26.6	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Chromium, Total	23.7		mg/kg	0.875	0.205	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Cobalt, Total	5.46		mg/kg	0.219	0.023	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Copper, Total	4.64		mg/kg	0.875	0.085	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Iron, Total	21200		mg/kg	87.5	9.02	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Lead, Total	6.18		mg/kg	0.263	0.064	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Magnesium, Total	4080		mg/kg	43.8	5.39	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Manganese, Total	107		mg/kg	0.875	0.194	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Mercury, Total	0.012	J	mg/kg	0.029	0.004	5	10/20/17 14:31	10/25/17 11:11	EPA 7474	1,7474	BV
Nickel, Total	12.1		mg/kg	0.438	0.117	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Potassium, Total	1780		mg/kg	43.8	6.95	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Selenium, Total	2.18		mg/kg	0.875	0.331	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Silver, Total	0.029	J	mg/kg	0.219	0.021	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Sodium, Total	3130		mg/kg	65.6	5.13	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Thallium, Total	0.101		mg/kg	0.088	0.023	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Vanadium, Total	23.6		mg/kg	0.438	0.166	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM
Zinc, Total	35.6		mg/kg	4.38	1.14	2	10/20/17 14:22	10/24/17 14:12	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-02  
 Client ID: VC-IRB-02  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 34%

Date Collected: 10/07/17 14:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	19000		mg/kg	57.2	8.46	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Antimony, Total	0.142	J	mg/kg	0.915	0.077	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Arsenic, Total	11.8		mg/kg	0.286	0.038	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Barium, Total	59.1		mg/kg	1.72	0.121	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Beryllium, Total	1.21		mg/kg	0.172	0.050	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Cadmium, Total	0.281		mg/kg	0.114	0.015	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Calcium, Total	2590		mg/kg	286	34.8	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Chromium, Total	44.9		mg/kg	1.14	0.268	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Cobalt, Total	10.5		mg/kg	0.286	0.030	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Copper, Total	14.8		mg/kg	1.14	0.111	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Iron, Total	28900		mg/kg	114	11.8	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Lead, Total	17.9		mg/kg	0.343	0.084	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Magnesium, Total	8190		mg/kg	57.2	7.04	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Manganese, Total	273		mg/kg	1.14	0.254	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Mercury, Total	0.060		mg/kg	0.044	0.006	5	10/20/17 14:31	10/25/17 11:13	EPA 7474	1,7474	BV
Nickel, Total	23.8		mg/kg	0.572	0.153	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Potassium, Total	3400		mg/kg	57.2	9.08	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Selenium, Total	4.04		mg/kg	1.14	0.432	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Silver, Total	0.119	J	mg/kg	0.286	0.028	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Sodium, Total	5240		mg/kg	85.8	6.70	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Thallium, Total	0.211		mg/kg	0.114	0.030	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Vanadium, Total	42.2		mg/kg	0.572	0.217	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM
Zinc, Total	90.8		mg/kg	5.72	1.49	2	10/20/17 14:22	10/24/17 14:16	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-03  
 Client ID: VC-IRB-03-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 60%

Date Collected: 10/07/17 15:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	6680		mg/kg	31.3	4.64	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Antimony, Total	0.063	J	mg/kg	0.501	0.042	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Arsenic, Total	4.04		mg/kg	0.157	0.021	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Barium, Total	16.1		mg/kg	0.940	0.066	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Beryllium, Total	0.420		mg/kg	0.094	0.027	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Cadmium, Total	0.102		mg/kg	0.063	0.008	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Calcium, Total	3740		mg/kg	157	19.0	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Chromium, Total	14.4		mg/kg	0.626	0.147	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Cobalt, Total	5.10		mg/kg	0.157	0.017	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Copper, Total	4.46		mg/kg	0.626	0.061	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Iron, Total	11700		mg/kg	62.6	6.45	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Lead, Total	5.49		mg/kg	0.188	0.046	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Magnesium, Total	2670		mg/kg	31.3	3.86	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Manganese, Total	75.5		mg/kg	0.626	0.139	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Mercury, Total	0.017	J	mg/kg	0.018	0.002	5	10/20/17 14:31	10/25/17 11:16	EPA 7474	1,7474	BV
Nickel, Total	7.41		mg/kg	0.313	0.084	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Potassium, Total	1190		mg/kg	31.3	4.97	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Selenium, Total	1.30		mg/kg	0.626	0.237	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Silver, Total	0.031	J	mg/kg	0.157	0.015	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Sodium, Total	2700		mg/kg	47.0	3.67	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Thallium, Total	0.078		mg/kg	0.063	0.016	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Vanadium, Total	14.0		mg/kg	0.313	0.119	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM
Zinc, Total	27.7		mg/kg	3.13	0.814	2	10/20/17 14:22	10/24/17 14:20	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-04  
 Client ID: VC-IRB-03-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 33%

Date Collected: 10/07/17 15:50  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	13400		mg/kg	59.9	8.87	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Antimony, Total	0.082	J	mg/kg	0.958	0.081	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Arsenic, Total	10.6		mg/kg	0.300	0.040	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Barium, Total	119		mg/kg	1.80	0.126	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Beryllium, Total	3.20		mg/kg	0.180	0.052	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Cadmium, Total	0.287		mg/kg	0.120	0.016	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Calcium, Total	1170		mg/kg	300	36.4	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Chromium, Total	27.6		mg/kg	1.20	0.280	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Cobalt, Total	35.8		mg/kg	0.300	0.032	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Copper, Total	5.47		mg/kg	1.20	0.116	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Iron, Total	13500		mg/kg	120	12.3	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Lead, Total	6.49		mg/kg	0.359	0.088	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Magnesium, Total	3170		mg/kg	59.9	7.38	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Manganese, Total	162		mg/kg	1.20	0.266	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Mercury, Total	0.007	J	mg/kg	0.043	0.006	5	10/20/17 14:31	10/25/17 11:18	EPA 7474	1,7474	BV
Nickel, Total	16.9		mg/kg	0.599	0.160	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Potassium, Total	1170		mg/kg	59.9	9.51	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Selenium, Total	4.59		mg/kg	1.20	0.453	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.300	0.029	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Sodium, Total	1820		mg/kg	89.9	7.02	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Thallium, Total	0.367		mg/kg	0.120	0.031	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Vanadium, Total	31.2		mg/kg	0.599	0.227	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM
Zinc, Total	53.3		mg/kg	5.99	1.56	2	10/20/17 14:22	10/24/17 14:24	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-05  
 Client ID: VC-IRB-04  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 46%

Date Collected: 10/06/17 18:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	13500		mg/kg	42.6	6.30	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Antimony, Total	0.072	J	mg/kg	0.681	0.058	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Arsenic, Total	7.43		mg/kg	0.213	0.028	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Barium, Total	113		mg/kg	1.28	0.090	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Beryllium, Total	0.956		mg/kg	0.128	0.037	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Cadmium, Total	0.141		mg/kg	0.085	0.011	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Calcium, Total	1520		mg/kg	213	25.9	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Chromium, Total	38.2		mg/kg	0.852	0.199	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Cobalt, Total	11.8		mg/kg	0.213	0.023	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Copper, Total	7.96		mg/kg	0.852	0.083	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Iron, Total	19400		mg/kg	85.2	8.77	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Lead, Total	9.68		mg/kg	0.256	0.062	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Magnesium, Total	6300		mg/kg	42.6	5.25	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Manganese, Total	231		mg/kg	0.852	0.189	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Mercury, Total	0.012	J	mg/kg	0.028	0.004	5	10/20/17 14:31	10/25/17 11:21	EPA 7474	1,7474	BV
Nickel, Total	21.7		mg/kg	0.426	0.114	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Potassium, Total	1830		mg/kg	42.6	6.76	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Selenium, Total	3.02		mg/kg	0.852	0.322	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Silver, Total	0.031	J	mg/kg	0.213	0.021	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Sodium, Total	1060		mg/kg	63.9	4.99	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Thallium, Total	0.175		mg/kg	0.085	0.022	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Vanadium, Total	36.2		mg/kg	0.426	0.162	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM
Zinc, Total	59.5		mg/kg	4.26	1.11	2	10/20/17 14:22	10/24/17 14:27	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-06  
 Client ID: VC-IRB-05-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 41%

Date Collected: 10/06/17 19:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	15900		mg/kg	47.3	7.00	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Antimony, Total	0.148	J	mg/kg	0.756	0.064	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Arsenic, Total	10.3		mg/kg	0.236	0.031	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Barium, Total	33.5		mg/kg	1.42	0.100	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Beryllium, Total	0.914		mg/kg	0.142	0.041	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Cadmium, Total	0.174		mg/kg	0.095	0.013	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Calcium, Total	2390		mg/kg	236	28.7	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Chromium, Total	35.6		mg/kg	0.945	0.221	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Cobalt, Total	8.56		mg/kg	0.236	0.025	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Copper, Total	9.86		mg/kg	0.945	0.092	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Iron, Total	26100		mg/kg	94.5	9.74	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Lead, Total	12.9		mg/kg	0.284	0.069	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Magnesium, Total	7460		mg/kg	47.3	5.82	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Manganese, Total	203		mg/kg	0.945	0.210	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Mercury, Total	0.030	J	mg/kg	0.031	0.004	5	10/20/17 14:31	10/25/17 11:23	EPA 7474	1,7474	BV
Nickel, Total	19.0		mg/kg	0.473	0.126	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Potassium, Total	3250		mg/kg	47.3	7.51	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Selenium, Total	3.01		mg/kg	0.945	0.357	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Silver, Total	0.061	J	mg/kg	0.236	0.023	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Sodium, Total	6090		mg/kg	70.9	5.54	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Thallium, Total	0.162		mg/kg	0.095	0.024	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Vanadium, Total	35.7		mg/kg	0.473	0.179	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM
Zinc, Total	62.9		mg/kg	4.73	1.23	2	10/20/17 14:22	10/24/17 14:31	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-07  
 Client ID: VC-IRB-05-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 14%

Date Collected: 10/06/17 19:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	7500		mg/kg	144	21.3	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Antimony, Total	0.274	J	mg/kg	2.30	0.194	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Arsenic, Total	2.95		mg/kg	0.719	0.095	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Barium, Total	15.6		mg/kg	4.32	0.304	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Beryllium, Total	0.606		mg/kg	0.432	0.125	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Cadmium, Total	0.091	J	mg/kg	0.288	0.038	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Calcium, Total	5950		mg/kg	719	87.5	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Chromium, Total	18.0		mg/kg	2.88	0.673	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Cobalt, Total	3.76		mg/kg	0.719	0.077	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Copper, Total	3.68		mg/kg	2.88	0.279	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Iron, Total	17200		mg/kg	288	29.6	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Lead, Total	3.90		mg/kg	0.863	0.210	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Magnesium, Total	7540		mg/kg	144	17.7	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Manganese, Total	64.1		mg/kg	2.88	0.639	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.108	0.014	5	10/20/17 14:31	10/25/17 11:26	EPA 7474	1,7474	BV
Nickel, Total	9.92		mg/kg	1.44	0.384	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Potassium, Total	2020		mg/kg	144	22.8	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Selenium, Total	1.96	J	mg/kg	2.88	1.09	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.719	0.070	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Sodium, Total	13600		mg/kg	216	16.9	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Thallium, Total	0.098	J	mg/kg	0.288	0.074	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Vanadium, Total	24.5		mg/kg	1.44	0.546	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM
Zinc, Total	14.2	J	mg/kg	14.4	3.74	2	10/20/17 14:22	10/24/17 14:54	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-08  
 Client ID: VC-IRB-06  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 33%

Date Collected: 10/06/17 20:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	15300		mg/kg	60.8	9.00	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Antimony, Total	0.139	J	mg/kg	0.973	0.082	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Arsenic, Total	8.21		mg/kg	0.304	0.040	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Barium, Total	35.7		mg/kg	1.82	0.128	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Beryllium, Total	0.974		mg/kg	0.182	0.053	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Cadmium, Total	0.202		mg/kg	0.122	0.016	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Calcium, Total	2860		mg/kg	304	37.0	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Chromium, Total	34.1		mg/kg	1.22	0.284	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Cobalt, Total	7.50		mg/kg	0.304	0.032	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Copper, Total	7.96		mg/kg	1.22	0.118	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Iron, Total	30500		mg/kg	122	12.5	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Lead, Total	8.65		mg/kg	0.365	0.089	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Magnesium, Total	7150		mg/kg	60.8	7.49	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Manganese, Total	171		mg/kg	1.22	0.270	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Mercury, Total	0.017	J	mg/kg	0.037	0.005	5	10/20/17 14:31	10/25/17 11:28	EPA 7474	1,7474	BV
Nickel, Total	17.2		mg/kg	0.608	0.162	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Potassium, Total	3090		mg/kg	60.8	9.65	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Selenium, Total	2.85		mg/kg	1.22	0.460	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Silver, Total	0.047	J	mg/kg	0.304	0.030	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Sodium, Total	7720		mg/kg	91.2	7.12	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Thallium, Total	0.163		mg/kg	0.122	0.031	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Vanadium, Total	35.1		mg/kg	0.608	0.230	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM
Zinc, Total	51.2		mg/kg	6.08	1.58	2	10/20/17 14:22	10/24/17 14:58	EPA 3050B	1,6020A	AM





**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-09  
 Client ID: VC-IRB-07-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 36%

Date Collected: 10/07/17 19:00  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	10400		mg/kg	52.6	7.79	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Antimony, Total	0.157	J	mg/kg	0.842	0.071	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Arsenic, Total	5.92		mg/kg	0.263	0.035	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Barium, Total	26.5		mg/kg	1.58	0.111	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Beryllium, Total	0.580		mg/kg	0.158	0.046	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Cadmium, Total	0.201		mg/kg	0.105	0.014	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Calcium, Total	2440		mg/kg	263	32.0	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Chromium, Total	23.4		mg/kg	1.05	0.246	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Cobalt, Total	4.53		mg/kg	0.263	0.028	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Copper, Total	9.09		mg/kg	1.05	0.102	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Iron, Total	19400		mg/kg	105	10.8	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Lead, Total	12.7		mg/kg	0.316	0.077	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Magnesium, Total	4810		mg/kg	52.6	6.48	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Manganese, Total	135		mg/kg	1.05	0.234	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Mercury, Total	0.053		mg/kg	0.035	0.004	5	10/20/17 14:31	10/25/17 11:31	EPA 7474	1,7474	BV
Nickel, Total	11.8		mg/kg	0.526	0.140	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Potassium, Total	1960		mg/kg	52.6	8.35	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Selenium, Total	1.79		mg/kg	1.05	0.398	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Silver, Total	0.100	J	mg/kg	0.263	0.026	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Sodium, Total	5640		mg/kg	78.9	6.16	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Thallium, Total	0.117		mg/kg	0.105	0.027	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Vanadium, Total	23.2		mg/kg	0.526	0.199	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM
Zinc, Total	50.0		mg/kg	5.26	1.37	2	10/20/17 14:22	10/24/17 15:02	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-10  
 Client ID: VC-IRB-07-ALT-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 78%

Date Collected: 10/07/17 19:10  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	1780		mg/kg	25.1	3.72	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Antimony, Total	ND		mg/kg	0.402	0.034	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Arsenic, Total	0.502		mg/kg	0.126	0.017	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Barium, Total	5.15		mg/kg	0.754	0.053	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Beryllium, Total	0.066	J	mg/kg	0.075	0.022	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Cadmium, Total	ND		mg/kg	0.050	0.007	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Calcium, Total	75.7	J	mg/kg	126	15.3	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Chromium, Total	1.72		mg/kg	0.503	0.118	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Cobalt, Total	0.424		mg/kg	0.126	0.013	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Copper, Total	0.494	J	mg/kg	0.503	0.049	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Iron, Total	1440		mg/kg	50.3	5.18	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Lead, Total	1.46		mg/kg	0.151	0.037	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Magnesium, Total	208		mg/kg	25.1	3.10	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Manganese, Total	10.5		mg/kg	0.503	0.112	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.019	0.002	5	10/20/17 14:31	10/25/17 11:33	EPA 7474	1,7474	BV
Nickel, Total	0.917		mg/kg	0.251	0.067	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Potassium, Total	90.5		mg/kg	25.1	3.99	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Selenium, Total	ND		mg/kg	0.503	0.190	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.126	0.012	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Sodium, Total	234		mg/kg	37.7	2.95	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Thallium, Total	0.018	J	mg/kg	0.050	0.013	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Vanadium, Total	2.43		mg/kg	0.251	0.095	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM
Zinc, Total	2.53		mg/kg	2.51	0.654	2	10/20/17 14:22	10/24/17 15:05	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-11  
 Client ID: VC-IRB-08-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 49%

Date Collected: 10/08/17 18:10  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	12700		mg/kg	40.7	6.03	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Antimony, Total	0.198	J	mg/kg	0.652	0.055	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Arsenic, Total	10.5		mg/kg	0.204	0.027	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Barium, Total	30.2		mg/kg	1.22	0.086	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Beryllium, Total	0.645		mg/kg	0.122	0.036	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Cadmium, Total	0.223		mg/kg	0.082	0.011	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Calcium, Total	2540		mg/kg	204	24.8	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Chromium, Total	33.5		mg/kg	0.815	0.191	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Cobalt, Total	7.37		mg/kg	0.204	0.022	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Copper, Total	10.9		mg/kg	0.815	0.079	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Iron, Total	20800		mg/kg	81.5	8.39	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Lead, Total	14.3		mg/kg	0.244	0.060	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Magnesium, Total	5970		mg/kg	40.7	5.02	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Manganese, Total	197		mg/kg	0.815	0.181	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Mercury, Total	0.047		mg/kg	0.024	0.003	5	10/20/17 14:31	10/25/17 11:41	EPA 7474	1,7474	BV
Nickel, Total	17.5		mg/kg	0.407	0.109	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Potassium, Total	2710		mg/kg	40.7	6.47	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Selenium, Total	2.58		mg/kg	0.815	0.308	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Silver, Total	0.094	J	mg/kg	0.204	0.020	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Sodium, Total	3030		mg/kg	61.1	4.77	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Thallium, Total	0.175		mg/kg	0.082	0.021	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Vanadium, Total	32.7		mg/kg	0.407	0.154	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM
Zinc, Total	65.8		mg/kg	4.07	1.06	2	10/20/17 14:22	10/24/17 15:09	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-12  
 Client ID: VC-IRB-08-ALT-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 14%

Date Collected: 10/08/17 18:20  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	11500		mg/kg	143	21.1	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Antimony, Total	ND		mg/kg	2.28	0.193	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Arsenic, Total	5.09		mg/kg	0.714	0.094	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Barium, Total	18.3		mg/kg	4.28	0.302	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Beryllium, Total	0.528		mg/kg	0.428	0.124	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Cadmium, Total	0.099	J	mg/kg	0.286	0.038	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Calcium, Total	4880		mg/kg	714	86.8	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Chromium, Total	26.4		mg/kg	2.86	0.668	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Cobalt, Total	4.38		mg/kg	0.714	0.076	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Copper, Total	5.29		mg/kg	2.86	0.277	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Iron, Total	19600		mg/kg	286	29.4	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Lead, Total	5.76		mg/kg	0.857	0.208	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Magnesium, Total	5060		mg/kg	143	17.6	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Manganese, Total	85.4		mg/kg	2.86	0.634	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.096	0.012	5	10/20/17 14:31	10/25/17 11:43	EPA 7474	1,7474	BV
Nickel, Total	13.7		mg/kg	1.43	0.382	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Potassium, Total	2230		mg/kg	143	22.7	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Selenium, Total	2.18	J	mg/kg	2.86	1.08	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.714	0.070	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Sodium, Total	10200		mg/kg	214	16.7	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Thallium, Total	0.105	J	mg/kg	0.286	0.074	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Vanadium, Total	31.2		mg/kg	1.43	0.542	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM
Zinc, Total	23.7		mg/kg	14.3	3.71	2	10/20/17 14:22	10/24/17 15:13	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-13  
 Client ID: VC-IRB-08-ALT-S3  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 81%

Date Collected: 10/08/17 18:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	2860		mg/kg	23.9	3.53	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Antimony, Total	ND		mg/kg	0.382	0.032	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Arsenic, Total	0.761		mg/kg	0.119	0.016	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Barium, Total	4.28		mg/kg	0.716	0.050	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Beryllium, Total	0.158		mg/kg	0.072	0.021	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Cadmium, Total	ND		mg/kg	0.048	0.006	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Calcium, Total	162		mg/kg	119	14.5	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Chromium, Total	2.32		mg/kg	0.477	0.112	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Cobalt, Total	0.579		mg/kg	0.119	0.013	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Copper, Total	0.845		mg/kg	0.477	0.046	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Iron, Total	2470		mg/kg	47.7	4.92	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Lead, Total	2.07		mg/kg	0.143	0.035	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Magnesium, Total	290		mg/kg	23.9	2.94	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Manganese, Total	15.8		mg/kg	0.477	0.106	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Mercury, Total	0.003	J	mg/kg	0.018	0.002	5	10/20/17 14:31	10/25/17 11:46	EPA 7474	1,7474	BV
Nickel, Total	1.38		mg/kg	0.239	0.064	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Potassium, Total	129		mg/kg	23.9	3.79	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Selenium, Total	0.671		mg/kg	0.477	0.180	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.119	0.012	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Sodium, Total	282		mg/kg	35.8	2.80	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Thallium, Total	0.028	J	mg/kg	0.048	0.012	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Vanadium, Total	3.72		mg/kg	0.239	0.091	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM
Zinc, Total	4.45		mg/kg	2.39	0.620	2	10/20/17 14:22	10/24/17 15:17	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-14  
 Client ID: VC-IRB-09-ALT  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 45%

Date Collected: 10/08/17 16:00  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	15700		mg/kg	44.7	6.62	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Antimony, Total	0.129	J	mg/kg	0.716	0.061	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Arsenic, Total	10.6		mg/kg	0.224	0.030	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Barium, Total	43.4		mg/kg	1.34	0.095	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Beryllium, Total	0.713		mg/kg	0.134	0.039	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Cadmium, Total	0.110		mg/kg	0.090	0.012	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Calcium, Total	2600		mg/kg	224	27.2	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Chromium, Total	38.5		mg/kg	0.895	0.209	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Cobalt, Total	9.44		mg/kg	0.224	0.024	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Copper, Total	9.14		mg/kg	0.895	0.087	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Iron, Total	24500		mg/kg	89.5	9.22	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Lead, Total	8.30		mg/kg	0.268	0.065	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Magnesium, Total	6960		mg/kg	44.7	5.51	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Manganese, Total	202		mg/kg	0.895	0.199	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Mercury, Total	0.009	J	mg/kg	0.034	0.004	5	10/20/17 14:31	10/25/17 11:48	EPA 7474	1,7474	BV
Nickel, Total	22.0		mg/kg	0.447	0.120	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Potassium, Total	3460		mg/kg	44.7	7.10	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Selenium, Total	2.98		mg/kg	0.895	0.338	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Silver, Total	0.034	J	mg/kg	0.224	0.022	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Sodium, Total	6630		mg/kg	67.1	5.24	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Thallium, Total	0.143		mg/kg	0.090	0.023	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Vanadium, Total	38.8		mg/kg	0.447	0.170	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM
Zinc, Total	57.6		mg/kg	4.47	1.16	2	10/20/17 14:22	10/24/17 15:21	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-15  
 Client ID: VC-IRB-10  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 55%

Date Collected: 10/07/17 17:05  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	11200		mg/kg	35.0	5.17	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Antimony, Total	0.158	J	mg/kg	0.559	0.047	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Arsenic, Total	8.65		mg/kg	0.175	0.023	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Barium, Total	30.8		mg/kg	1.05	0.074	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Beryllium, Total	0.544		mg/kg	0.105	0.031	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Cadmium, Total	0.123		mg/kg	0.070	0.009	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Calcium, Total	2220		mg/kg	175	21.2	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Chromium, Total	30.0		mg/kg	0.699	0.164	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Cobalt, Total	7.04		mg/kg	0.175	0.019	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Copper, Total	7.91		mg/kg	0.699	0.068	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Iron, Total	17900		mg/kg	69.9	7.20	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Lead, Total	8.56		mg/kg	0.210	0.051	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Magnesium, Total	6260		mg/kg	35.0	4.31	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Manganese, Total	188		mg/kg	0.699	0.155	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Mercury, Total	0.007	J	mg/kg	0.028	0.004	5	10/20/17 14:31	10/25/17 10:54	EPA 7474	1,7474	BV
Nickel, Total	17.0		mg/kg	0.350	0.093	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Potassium, Total	2720		mg/kg	35.0	5.55	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Selenium, Total	2.18		mg/kg	0.699	0.264	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Silver, Total	0.038	J	mg/kg	0.175	0.017	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Sodium, Total	4040		mg/kg	52.4	4.10	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Thallium, Total	0.153		mg/kg	0.070	0.018	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Vanadium, Total	30.7		mg/kg	0.350	0.132	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM
Zinc, Total	46.6		mg/kg	3.50	0.909	2	10/20/17 14:22	10/24/17 13:35	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-16  
 Client ID: VC-IRB-12-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 77%

Date Collected: 10/06/17 12:30  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	1400		mg/kg	25.7	3.80	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Antimony, Total	ND		mg/kg	0.411	0.035	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Arsenic, Total	0.896		mg/kg	0.128	0.017	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Barium, Total	3.14		mg/kg	0.770	0.054	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Beryllium, Total	0.057	J	mg/kg	0.077	0.022	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Cadmium, Total	0.022	J	mg/kg	0.051	0.007	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Calcium, Total	474		mg/kg	128	15.6	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Chromium, Total	3.37		mg/kg	0.513	0.120	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Cobalt, Total	0.810		mg/kg	0.128	0.014	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Copper, Total	0.739		mg/kg	0.513	0.050	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Iron, Total	2010		mg/kg	51.3	5.29	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Lead, Total	0.956		mg/kg	0.154	0.038	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Magnesium, Total	764		mg/kg	25.7	3.16	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Manganese, Total	18.6		mg/kg	0.513	0.114	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.017	0.002	5	10/20/17 14:31	10/25/17 11:51	EPA 7474	1,7474	BV
Nickel, Total	1.86		mg/kg	0.257	0.069	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Potassium, Total	336		mg/kg	25.7	4.08	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Selenium, Total	0.287	J	mg/kg	0.513	0.194	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.128	0.013	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Sodium, Total	2110		mg/kg	38.5	3.01	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Thallium, Total	0.020	J	mg/kg	0.051	0.013	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Vanadium, Total	3.44		mg/kg	0.257	0.097	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM
Zinc, Total	4.80		mg/kg	2.57	0.667	2	10/20/17 14:22	10/24/17 15:24	EPA 3050B	1,6020A	AM





**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-17  
 Client ID: VC-IRB-12-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 58%

Date Collected: 10/06/17 12:40  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	11400		mg/kg	34.2	5.06	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Antimony, Total	0.191	J	mg/kg	0.547	0.046	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Arsenic, Total	5.60		mg/kg	0.171	0.023	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Barium, Total	28.3		mg/kg	1.02	0.072	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Beryllium, Total	0.474		mg/kg	0.102	0.030	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Cadmium, Total	0.187		mg/kg	0.068	0.009	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Calcium, Total	2120		mg/kg	171	20.8	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Chromium, Total	28.0		mg/kg	0.684	0.160	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Cobalt, Total	6.85		mg/kg	0.171	0.018	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Copper, Total	8.13		mg/kg	0.684	0.066	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Iron, Total	15400		mg/kg	68.4	7.04	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Lead, Total	6.88		mg/kg	0.205	0.050	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Magnesium, Total	5560		mg/kg	34.2	4.21	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Manganese, Total	164		mg/kg	0.684	0.152	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Mercury, Total	0.006	J	mg/kg	0.026	0.003	5	10/20/17 14:31	10/25/17 11:53	EPA 7474	1,7474	BV
Nickel, Total	16.3		mg/kg	0.342	0.091	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Potassium, Total	2390		mg/kg	34.2	5.43	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Selenium, Total	2.18		mg/kg	0.684	0.258	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Silver, Total	0.027	J	mg/kg	0.171	0.017	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Sodium, Total	3780		mg/kg	51.3	4.00	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Thallium, Total	0.161		mg/kg	0.068	0.018	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Vanadium, Total	30.3		mg/kg	0.342	0.130	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM
Zinc, Total	41.6		mg/kg	3.42	0.888	2	10/20/17 14:22	10/24/17 15:50	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

Lab ID: L1736278-18  
 Client ID: VC-IRB-25  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 37%

Date Collected: 10/07/17 14:45  
 Date Received: 10/09/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	17100		mg/kg	52.4	7.75	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Antimony, Total	0.148	J	mg/kg	0.838	0.071	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Arsenic, Total	10.1		mg/kg	0.262	0.035	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Barium, Total	57.4		mg/kg	1.57	0.110	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Beryllium, Total	1.08		mg/kg	0.157	0.046	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Cadmium, Total	0.267		mg/kg	0.105	0.014	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Calcium, Total	2330		mg/kg	262	31.8	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Chromium, Total	40.9		mg/kg	1.05	0.245	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Cobalt, Total	9.58		mg/kg	0.262	0.028	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Copper, Total	13.2		mg/kg	1.05	0.102	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Iron, Total	25400		mg/kg	105	10.8	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Lead, Total	15.8		mg/kg	0.314	0.076	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Magnesium, Total	7290		mg/kg	52.4	6.45	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Manganese, Total	243		mg/kg	1.05	0.232	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Mercury, Total	0.052		mg/kg	0.030	0.004	5	10/20/17 14:31	10/25/17 11:55	EPA 7474	1,7474	BV
Nickel, Total	21.1		mg/kg	0.524	0.140	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Potassium, Total	3040		mg/kg	52.4	8.32	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Selenium, Total	3.66		mg/kg	1.05	0.396	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Silver, Total	0.105	J	mg/kg	0.262	0.026	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Sodium, Total	4770		mg/kg	78.5	6.14	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Thallium, Total	0.172		mg/kg	0.105	0.027	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Vanadium, Total	38.8		mg/kg	0.524	0.198	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM
Zinc, Total	79.5		mg/kg	5.24	1.36	2	10/20/17 14:22	10/24/17 15:53	EPA 3050B	1,6020A	AM



Project Name: US WIND  
Project Number: U167-022

Lab Number: L1736278  
Report Date: 11/17/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-18 Batch: WG1054422-1									
Aluminum, Total	ND	mg/kg	20.0	2.96	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Antimony, Total	ND	mg/kg	0.320	0.027	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Arsenic, Total	ND	mg/kg	0.100	0.013	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Barium, Total	ND	mg/kg	0.600	0.042	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Beryllium, Total	ND	mg/kg	0.060	0.017	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Cadmium, Total	ND	mg/kg	0.040	0.005	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Calcium, Total	ND	mg/kg	100	12.2	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Chromium, Total	ND	mg/kg	0.400	0.094	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Cobalt, Total	ND	mg/kg	0.100	0.011	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Copper, Total	ND	mg/kg	0.400	0.039	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Iron, Total	ND	mg/kg	40.0	4.12	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Lead, Total	ND	mg/kg	0.120	0.029	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Magnesium, Total	ND	mg/kg	20.0	2.46	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Manganese, Total	ND	mg/kg	0.400	0.089	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Nickel, Total	ND	mg/kg	0.200	0.053	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Potassium, Total	ND	mg/kg	20.0	3.18	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Selenium, Total	ND	mg/kg	0.400	0.151	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Silver, Total	ND	mg/kg	0.100	0.010	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Sodium, Total	ND	mg/kg	30.0	2.34	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Thallium, Total	ND	mg/kg	0.040	0.010	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Vanadium, Total	ND	mg/kg	0.200	0.076	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM
Zinc, Total	ND	mg/kg	2.00	0.520	2	10/20/17 14:22	10/24/17 13:09	1,6020A	AM

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-18 Batch: WG1054424-1									
Mercury, Total	ND	mg/kg	0.013	0.002	5	10/20/17 14:31	10/25/17 10:49	1,7474	BV



**Project Name:** US WIND

**Lab Number:** L1736278

**Project Number:** U167-022

**Report Date:** 11/17/17

## Method Blank Analysis Batch Quality Control

### Prep Information

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Digestion Method: EPA 7474



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Lab Number: L1736278

Project Number: U167-022

Report Date: 11/17/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01-18 Batch: WG1054422-2 SRM Lot Number: D098-540								
Aluminum, Total	97		-		47-153	-		20
Antimony, Total	172		-		6-194	-		20
Arsenic, Total	110		-		83-117	-		20
Barium, Total	108		-		82-118	-		20
Beryllium, Total	109		-		83-117	-		20
Cadmium, Total	114		-		82-117	-		20
Calcium, Total	109		-		81-118	-		20
Chromium, Total	113		-		83-119	-		20
Cobalt, Total	111		-		84-116	-		20
Copper, Total	109		-		84-116	-		20
Iron, Total	123		-		60-140	-		20
Lead, Total	117		-		82-117	-		20
Magnesium, Total	111		-		76-124	-		20
Manganese, Total	115		-		82-118	-		20
Nickel, Total	111		-		82-117	-		20
Potassium, Total	106		-		69-131	-		20
Selenium, Total	114		-		78-121	-		20
Silver, Total	102		-		80-120	-		20
Sodium, Total	111		-		74-126	-		20
Thallium, Total	112		-		80-119	-		20
Vanadium, Total	109		-		79-121	-		20

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-18 Batch: WG1054422-2 SRM Lot Number: D098-540					
Zinc, Total	112	-	81-119	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-18 Batch: WG1054424-2 SRM Lot Number: D098-540					
Mercury, Total	101	-	50-149	-	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Aluminum, Total	11200	275	16800	2030	Q	16600	1860	Q	75-125	1		20
Antimony, Total	0.158J	68.9	68.1	99		71.4	98		75-125	5		20
Arsenic, Total	8.65	16.5	24.4	95		25.2	95		75-125	3		20
Barium, Total	30.8	275	261	84		275	84		75-125	5		20
Beryllium, Total	0.544	6.89	6.54	87		6.86	87		75-125	5		20
Cadmium, Total	0.123	7.02	7.12	100		7.65	101		75-125	7		20
Calcium, Total	2220	1380	4350	155	Q	4260	140	Q	75-125	2		20
Chromium, Total	30.0	27.5	63.6	122		64.9	120		75-125	2		20
Cobalt, Total	7.04	68.9	71.1	93		74.6	93		75-125	5		20
Copper, Total	7.91	34.4	41.0	96		42.9	96		75-125	5		20
Iron, Total	17900	138	26200	6020	Q	25500	5220	Q	75-125	3		20
Lead, Total	8.56	70.2	78.3	99		83.0	100		75-125	6		20
Magnesium, Total	6260	1380	8910	192	Q	8850	178	Q	75-125	1		20
Manganese, Total	188.	68.9	294	154	Q	288	138	Q	75-125	2		20
Nickel, Total	17.0	68.9	83.5	96		87.6	97		75-125	5		20
Potassium, Total	2720	1380	4750	147	Q	4820	144	Q	75-125	1		20
Selenium, Total	2.18	16.5	17.4	92		18.5	93		75-125	6		20
Silver, Total	0.038J	41.3	43.9	106		46.8	107		75-125	6		20
Sodium, Total	4040	1380	8760	343	Q	8560	311	Q	75-125	2		20
Thallium, Total	0.153	16.5	14.8	89		16.3	92		75-125	10		20
Vanadium, Total	30.7	68.9	102	104		104	101		75-125	2		20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1054422-3 WG1054422-4 QC Sample: L1736278-15 Client ID: VC-IRB-10									
Zinc, Total	46.6	68.9	117	102	121	102	75-125	3	20
Total Metals - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1054424-3 WG1054424-4 QC Sample: L1736278-15 Client ID: VC-IRB-10									
Mercury, Total	0.007J	1.14	1.17	103	1.26	102	80-120	7	20



# **INORGANICS & MISCELLANEOUS**

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-01  
**Client ID:** VC-IRB-01  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/07/17 18:20  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	3.24		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	2.63		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	1.10		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	1.10		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	7.90		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	28.0		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	28.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	64.8		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	32.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	1.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	34.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	130		mg/kg	16	5.9	1	10/11/17 13:00	10/11/17 22:15	121,4500NH3-BH	AT
Phosphorus, Total	530		mg/kg	54	18.	4.7	-	10/13/17 10:25	121,4500P-E	SD
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	43.6		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	94		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	6.1		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	55.4		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	56.4		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.27		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	90.58		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	113.0		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	42.61		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	52.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	42.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	10.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-02  
**Client ID:** VC-IRB-02  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/07/17 14:40  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	4.27		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	4.33		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	21.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	21.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	14.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	11.0		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	10.0		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	35.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	35.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	7.10		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	42.4		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	220		mg/kg	22	8.2	1	10/11/17 13:00	10/11/17 22:19	121,4500NH3-BH	AT
Phosphorus, Total	1100		mg/kg	66	22.	4.5	-	10/13/17 10:25	121,4500P-E	SD
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	33.9		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	90		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	9.8		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	64.5		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	0.108		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	0.100		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	66.1		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.90		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	71.79		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	161.0		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	27.50		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	70.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	56.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	14.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-03  
**Client ID:** VC-IRB-03-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/07/17 15:40  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>T</b>										
Total Organic Carbon (Rep1)	1.62		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	1.94		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>G</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	1.00		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	1.00		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	2.10		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	20.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	44.5		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	66.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	28.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	3.70		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	32.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>G</b>										
Nitrogen, Ammonia	17		mg/kg	12	4.6	1	10/11/17 13:00	10/11/17 22:20	121,4500NH3-BH	AT
Phosphorus, Total	300		mg/kg	16	5.3	1.9	-	10/13/17 10:25	121,4500P-E	SD
<b>G</b>										
Solids, Total	60.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	96		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	3.7		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	41.1		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	0.062		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	0.065		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	40.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.58		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>D</b>										
Bulk Density	91.08		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	71.60		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	53.09		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>A</b>										
Liquid Limit	40.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	30.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	10.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-04  
**Client ID:** VC-IRB-03-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/07/17 15:50  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	8.29		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	7.83		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	0.600		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	0.600		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	6.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	18.0		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	22.8		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	47.0		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	45.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	7.30		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	52.4		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	52		mg/kg	22	8.4	1	10/11/17 13:00	10/11/17 22:21	121,4500NH3-BH	AT
Phosphorus, Total	550		mg/kg	28	9.2	1.8	-	10/13/17 10:25	121,4500P-E	SD
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	32.6		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	83		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	17		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	70.6		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	67.4		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.44		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	72.17		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	176.0		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	26.10		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	62.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	50.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	12.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-05  
**Client ID:** VC-IRB-04  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/06/17 18:40  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	4.66		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	3.78		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	3.60		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	9.10		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	12.4		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	25.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	65.5		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	9.40		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	74.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	150		mg/kg	16	5.8	1	10/11/17 13:00	10/11/17 22:22	121,4500NH3-BH	AT
Phosphorus, Total	780		mg/kg	46	15.	4.2	-	10/13/17 10:25	121,4500P-E	SD
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	45.5		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	92		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	8.2		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	53.7		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	54.5		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.59		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	86.55		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	94.10		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	44.59		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	57.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	49.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	8.0		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-06  
**Client ID:** VC-IRB-05-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/06/17 19:30  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	3.04		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	2.86		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	0.800		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	0.800		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	9.60		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	7.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	15.8		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	32.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	57.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	9.00		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	66.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	94		mg/kg	18	6.7	1	10/11/17 13:00	10/11/17 22:23	121,4500NH3-BH	AT
Phosphorus, Total	700		mg/kg	46	15.	3.8	-	10/13/17 10:25	121,4500P-E	SD
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	41.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	93		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	6.6		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	59.0		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	0.097		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	0.090		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	59.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.44		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	77.58		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	135.0		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	33.03		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	60.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	48.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	12.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-07  
**Client ID:** VC-IRB-05-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/06/17 19:40  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	31.3		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	30.5		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	14.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	14.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	22.2		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	8.90		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	3.80		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	34.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	49.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	1.70		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	50.8		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	430		mg/kg	53	20.	1	10/12/17 14:00	10/16/17 21:49	121,4500NH3-BH	AT
Phosphorus, Total	740		mg/kg	150	50.	4.2	-	10/13/17 10:25	121,4500P-E	SD
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	13.9		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	43		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	57		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	85.6		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	1.36		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	1.41		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	86.1		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	1.61		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	62.19		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	578.0		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	9.179		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	90.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	93.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	NP		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC





**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-08  
**Client ID:** VC-IRB-06  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/06/17 20:30  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	6.43		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	6.50		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	0.300		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	0.300		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	7.80		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	12.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	13.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	33.8		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	52.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	13.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	65.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	280		mg/kg	22	8.4	1	10/12/17 14:00	10/16/17 21:50	121,4500NH3-BH	AT
Phosphorus, Total	830		mg/kg	26	8.6	1.7	-	10/13/17 10:25	121,4500P-E	SD
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	32.9		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	88		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	11		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	66.6		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	67.1		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.41		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	75.23		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	173.0		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	27.52		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	89.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	77.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	12.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-09  
**Client ID:** VC-IRB-07-ALT-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/07/17 19:00  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>T</b>										
Total Organic Carbon (Rep1)	5.92		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	7.14		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>G</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	0.400		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	0.400		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	11.4		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	28.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	28.2		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	68.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	27.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	4.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	31.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>G</b>										
Nitrogen, Ammonia	ND		mg/kg	21	7.7	1	10/12/17 14:00	10/16/17 21:50	121,4500NH3-BH	AT
Phosphorus, Total	350		mg/kg	22	7.4	1.6	-	10/13/17 10:25	121,4500P-E	SD
<b>G</b>										
Solids, Total	36.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	90		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	10		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	66.0		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	64.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	1.75		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>D</b>										
Bulk Density	77.58		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	173.0		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	28.40		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>A</b>										
Liquid Limit	48.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	45.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	3.0		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-10  
**Client ID:** VC-IRB-07-ALT-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/07/17 19:10  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>T</b>										
Total Organic Carbon (Rep1)	0.171		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	0.183		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>G</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	0.600		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	30.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	50.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	81.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	16.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	1.80		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	18.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>G</b>										
Nitrogen, Ammonia	ND		mg/kg	9.4	3.5	1	10/12/17 14:00	10/16/17 21:51	121,4500NH3-BH	AT
Phosphorus, Total	74		mg/kg	11	3.6	1.7	-	10/13/17 10:25	121,4500P-E	SD
<b>G</b>										
Solids, Total	77.7		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	99		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	0.66		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	20.3		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	0.248		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	0.241		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	22.3		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	1.44		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>D</b>										
Bulk Density	101.4		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	15.40		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	87.81		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>A</b>										
Liquid Limit	16.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	15.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	1.0		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-11  
**Client ID:** VC-IRB-08-ALT-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/08/17 18:10  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	2.07		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	1.99		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	0.900		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	0.900		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	4.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	8.00		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	16.8		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	29.0		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	63.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	6.50		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	70.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	58		mg/kg	15	5.7	1	10/12/17 14:00	10/16/17 21:52	121,4500NH3-BH	AT
Phosphorus, Total	430		mg/kg	10	3.4	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	48.7		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	96		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	4.0		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	51.2		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	0.994		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	0.969		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	51.3		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.52		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	88.65		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	102.0		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	43.95		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	53.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	45.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	8.0		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-12  
**Client ID:** VC-IRB-08-ALT-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/08/17 18:20  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	25.7		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	23.4		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	21.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	21.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	19.4		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	6.10		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	3.00		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	28.5		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	34.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	15.5		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	49.8		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	210		mg/kg	52	19.	1	10/12/17 14:00	10/16/17 21:53	121,4500NH3-BH	AT
Phosphorus, Total	380		mg/kg	32	11.	.9	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	14.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	97		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	3.2		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	29.7		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	86.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	1.64		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	60.51		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	647.0		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	8.104		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	75.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	70.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	5.0		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-13  
**Client ID:** VC-IRB-08-ALT-S3  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/08/17 18:30  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.316		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	0.264		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	0.200		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	28.5		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	54.2		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	82.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	14.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	2.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	17.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	16		mg/kg	9.1	3.4	1	10/12/17 14:00	10/16/17 21:54	121,4500NH3-BH	AT
Phosphorus, Total	56		mg/kg	6.2	2.0	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	81.2		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	99		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	0.83		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	18.6		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	18.8		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	3.09		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	107.4		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	16.00		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	92.60		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	17.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	16.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	1.0		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-14  
**Client ID:** VC-IRB-09-ALT  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/08/17 16:00  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	2.82		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	2.86		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	1.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	1.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	5.70		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	7.30		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	20.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	33.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	44.8		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	20.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	65.1		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	97		mg/kg	16	6.0	1	10/12/17 14:00	10/16/17 21:55	121,4500NH3-BH	AT
Phosphorus, Total	300		mg/kg	11	3.7	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	44.7		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	94		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	6.0		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	53.8		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	55.3		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.63		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	83.05		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	99.00		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	41.74		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	55.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	50.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	5.0		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-15  
**Client ID:** VC-IRB-10  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/07/17 17:05  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	1.74		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	1.67		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	0.800		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	0.800		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	5.10		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	8.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	27.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	40.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	47.7		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	10.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	58.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	28		mg/kg	13	5.0	1	10/12/17 14:00	10/16/17 21:56	121,4500NH3-BH	AT
Phosphorus, Total	460		mg/kg	9.1	3.0	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	55.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	96		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	3.8		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	47.4		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	0.118		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	0.103		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	45.0		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.43		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	92.28		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	82.60		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	50.55		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	46.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	43.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	3.0		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC





**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-16  
**Client ID:** VC-IRB-12-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/06/17 12:30  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.181		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	0.210		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	0.700		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	0.700		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	11.0		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	66.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	77.3		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	19.5		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	2.50		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	22.0		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	14		mg/kg	9.2	3.4	1	10/12/17 14:00	10/16/17 22:02	121,4500NH3-BH	AT
Phosphorus, Total	450		mg/kg	6.5	2.2	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	76.7		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	99		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	0.61		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	21.8		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	23.3		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	3.09		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	94.94		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	22.70		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	77.36		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	48.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	41.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	7.0		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-17  
**Client ID:** VC-IRB-12-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/06/17 12:40  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	1.22		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	1.27		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Coarse Sand	2.50		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Medium Sand	6.20		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Fine Sand	26.9		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Sand	35.6		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Silt Fine	56.8		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Clay Fine	7.60		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
% Total Fines	64.4		%	0.100	NA	1	-	11/08/17 08:52	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	120		mg/kg	13	4.7	1	10/12/17 14:00	10/16/17 22:03	121,4500NH3-BH	AT
Phosphorus, Total	460		mg/kg	7.8	2.6	.9	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	57.6		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Solids, Ash	97		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Organic Matter, Total	3.3		%	0.10	0.10	1	-	11/10/17 14:00	12,D2974	SP
Moisture	24.6		%	0.100	NA	1	-	11/10/17 14:00	12,D2974	SP
% Soot (Rep 1)	0.156		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	0.191		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	42.4		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
Specific Gravity	2.80		-	-	NA	1	-	11/14/17 10:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	98.27		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Moisture Content	59.80		%	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
Dry Density	61.50		lbs/ft3	0.0100	NA	1	-	11/14/17 11:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	19.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plastic Limit	20.		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC
Plasticity Index	NP		-	-	NA	1	-	11/17/17 11:14	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**SAMPLE RESULTS**

**Lab ID:** L1736278-18  
**Client ID:** VC-IRB-25  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/07/17 14:45  
**Date Received:** 10/09/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	4.54		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	4.45		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	180		mg/kg	20	7.5	1	10/12/17 14:00	10/16/17 22:04	121,4500NH3-BH	AT
Phosphorus, Total	450		mg/kg	12	4.0	.9	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	37.3		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP
% Soot (Rep 1)	0.607		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	0.597		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
Moisture	62.7		%	0.100	0.100	1	-	11/09/17 13:03	121,2540G	SP



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1051070-1</b>										
Nitrogen, Ammonia	ND		mg/kg	7.5	0.02	1	10/11/17 13:00	10/11/17 21:54	121,4500NH3-BH	AT
<b>General Chemistry - Westborough Lab for sample(s): 07-18 Batch: WG1051546-1</b>										
Nitrogen, Ammonia	ND		mg/kg	7.5	0.02	1	10/12/17 14:00	10/16/17 21:36	121,4500NH3-BH	AT
<b>General Chemistry - Westborough Lab for sample(s): 01-10 Batch: WG1051985-1</b>										
Phosphorus, Total	ND		mg/kg	5.0	1.7	1	-	10/13/17 10:25	121,4500P-E	SD
<b>General Chemistry - Westborough Lab for sample(s): 11-18 Batch: WG1053383-1</b>										
Phosphorus, Total	1.7	J	mg/kg	5.0	1.7	1	-	10/17/17 19:00	121,4500P-E	CW
<b>Total Organic Carbon - Mansfield Lab for sample(s): 01-18 Batch: WG1062984-1</b>										
Total Organic Carbon (Rep1)	ND		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
Total Organic Carbon (Rep2)	ND		%	0.050	0.050	1	-	11/13/17 17:12	13,-	LC
<b>General Chemistry - Mansfield Lab for sample(s): 01-10 Batch: WG1063751-1</b>										
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
<b>General Chemistry - Mansfield Lab for sample(s): 11-18 Batch: WG1063752-1</b>										
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/15/17 13:21	91,-	LC

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736278

Report Date: 11/17/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1051070-2								
Nitrogen, Ammonia	98		-		83-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 07-18 Batch: WG1051546-2								
Nitrogen, Ammonia	100		-		83-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 Batch: WG1051985-2								
Phosphorus, Total	106		-		52-148	-		20
General Chemistry - Westborough Lab Associated sample(s): 11-18 Batch: WG1053383-2								
Phosphorus, Total	90		-		52-148	-		20
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-18 Batch: WG1062984-2								
Total Organic Carbon (Rep1)	85		-		75-125	-		25
Total Organic Carbon (Rep2)	93		-		75-125	-		25
General Chemistry - Mansfield Lab Associated sample(s): 01-10 Batch: WG1063751-2								
% Soot (Rep 1)	102		-		75-125	-		25
% Soot (Rep 2)	100		-		75-125	-		25

## Lab Control Sample Analysis

Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736278

Report Date: 11/17/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 11-18 Batch: WG1063752-2					
% Soot (Rep 1)	101	-	75-125	-	25
% Soot (Rep 2)	101	-	75-125	-	25

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1051070-4 QC Sample: L1736523-01 Client ID: MS Sample												
Nitrogen, Ammonia	4.7J	530	510	96		-	-		55-144	-		20
General Chemistry - Westborough Lab Associated sample(s): 07-18 QC Batch ID: WG1051546-4 QC Sample: L1736278-15 Client ID: VC-IRB-10												
Nitrogen, Ammonia	28.	710	760	103		-	-		55-144	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1051985-3 QC Sample: L1733996-01 Client ID: MS Sample												
Phosphorus, Total	4600	214	5200	280	Q	-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 11-18 QC Batch ID: WG1053383-4 QC Sample: L1736278-15 Client ID: VC-IRB-10												
Phosphorus, Total	460	361	820	100		-	-		75-125	-		20
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1062984-4 QC Sample: L1736278-07 Client ID: VC-IRB-05-S2												
Total Organic Carbon (Rep1)	31.3	1.7	33.1	106		-	-		75-125	-		25
Total Organic Carbon (Rep2)	30.5	1.75	34.2	211	Q	-	-		75-125	-		25
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1062984-6 WG1062984-7 QC Sample: L1736278-15 Client ID: VC-IRB-10												
Total Organic Carbon (Rep1)	1.74	0.878	2.57	94		2.89	113		75-125	12		25
Total Organic Carbon (Rep2)	1.67	0.974	2.78	114		2.38	106		75-125	16		25
General Chemistry - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1063751-4 QC Sample: L1736278-01 Client ID: VC-IRB-01												
% Soot (Rep 1)	ND	0.791	0.836	106		-	-		75-125	-		25
% Soot (Rep 2)	ND	0.933	0.978	105		-	-		75-125	-		25

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 11-18 QC Batch ID: WG1063752-4 WG1063752-5 QC Sample: L1736278-15 Client ID: VC-IRB-10									
% Soot (Rep 1)	0.118	1.03	1.25	110	1.15	112	75-125	8	25
% Soot (Rep 2)	0.103	1.12	1.33	109	1.12	111	75-125	17	25



## Lab Duplicate Analysis

Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736278

Report Date: 11/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1051070-3 QC Sample: L1736523-01 Client ID: DUP Sample						
Nitrogen, Ammonia	4.7J	5.4J	mg/kg	NC		20
General Chemistry - Westborough Lab Associated sample(s): 07-18 QC Batch ID: WG1051546-3 QC Sample: L1736278-15 Client ID: VC-IRB-10						
Nitrogen, Ammonia	28.	25	mg/kg	11		20
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1051985-4 QC Sample: L1733996-01 Client ID: DUP Sample						
Phosphorus, Total	4600	5800	mg/kg	23	Q	20
General Chemistry - Westborough Lab Associated sample(s): 11-18 QC Batch ID: WG1053383-3 QC Sample: L1736278-15 Client ID: VC-IRB-10						
Phosphorus, Total	460	470	mg/kg	2		20

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Grain Size Analysis - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG1060825-1 QC Sample: L1736278-15 Client ID: VC-IRB-10</b>					
Cobbles	ND	ND	%	NC	20
% Coarse Gravel	ND	ND	%	NC	20
% Fine Gravel	0.800	0.900	%	12	20
% Total Gravel	0.800	0.900	%	12	20
% Coarse Sand	5.10	3.60	%	34	Q 20
% Medium Sand	8.20	7.70	%	6	20
% Fine Sand	27.3	28.9	%	6	20
% Total Sand	40.6	40.2	%	1	20
% Silt Fine	47.7	50.9	%	6	20
% Clay Fine	10.9	8.00	%	31	Q 20
% Total Fines	58.6	58.9	%	1	20
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1061261-1 QC Sample: L1736278-15 Client ID: VC-IRB-10</b>					
Solids, Total	55.0	51.3	%	7	10
Moisture	45	48.7	%	8	10
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG1061280-1 QC Sample: L1736278-15 Client ID: VC-IRB-10</b>					
Solids, Ash	96.	64U	%	41	
Organic Matter, Total	3.8	36U	%	162	
Moisture	47.4	62.9	%	28	Q 10

## Lab Duplicate Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG1062901-1 QC Sample: L1736278-15 Client ID: VC-IRB-10</b>					
Specific Gravity	2.43	2.54U	-	4	20
<b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1062984-3 QC Sample: L1736278-07 Client ID: VC-IRB-05-S2</b>					
Total Organic Carbon (Rep1)	31.3	31.7	%	1	25
Total Organic Carbon (Rep2)	30.5	31.6	%	4	25
<b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-18 QC Batch ID: WG1062984-5 QC Sample: L1736278-15 Client ID: VC-IRB-10</b>					
Total Organic Carbon (Rep1)	1.74	1.80	%	3	25
Total Organic Carbon (Rep2)	1.67	1.68	%	1	25
<b>Density of Soil - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG1063225-1 QC Sample: L1736278-15 Client ID: VC-IRB-10</b>					
Bulk Density	92.28	86.95	lbs/ft3	6	20
Moisture Content	82.60	82.40	%	0	20
Dry Density	50.55	47.68	lbs/ft3	6	20
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1063751-3 QC Sample: L1736278-01 Client ID: VC-IRB-01</b>					
% Soot (Rep 1)	ND	ND	%	NC	25
% Soot (Rep 2)	ND	ND	%	NC	25
<b>General Chemistry - Mansfield Lab Associated sample(s): 11-18 QC Batch ID: WG1063752-3 QC Sample: L1736278-15 Client ID: VC-IRB-10</b>					
% Soot (Rep 1)	0.118	0.128	%	8	25
% Soot (Rep 2)	0.103	0.127	%	21	25

## Lab Duplicate Analysis

Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736278

Report Date: 11/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Atterberg Limits - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG1064167-1 QC Sample: L1736278-03 Client ID: VC-IRB-03-S1					
Liquid Limit	40.	40	-	0	20
Plastic Limit	30.	32	-	6	20
Plasticity Index	10.	8.0	-	22	Q 20
Atterberg Limits - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG1064167-2 QC Sample: L1736278-11 Client ID: VC-IRB-08-ALT-S1					
Liquid Limit	53.	49	-	8	20
Plastic Limit	45.	47	-	4	20
Plasticity Index	8.0	2.0	-	120	Q 20

**Project Name:** US WIND  
**Project Number:** U167-022

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**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Cooler Information**

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1736278-01A	Glass 250ml/8oz unpreserved	B	NA		2.5	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736278-01B	Glass 500ml/16oz unpreserved	B	NA		2.5	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-01C	Amber 120ml unpreserved	B	NA		2.5	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-01D	Glass 120ml/4oz unpreserved	B	NA		2.5	Y	Absent		SUB-PCB-1668()
L1736278-01E	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-01F	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()

\*Values in parentheses indicate holding time in days



**Project Name:** US WIND  
**Project Number:** U167-022

**Serial\_No:** 11171716:20  
**Lab Number:** L1736278  
**Report Date:** 11/17/17

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1736278-01G	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-02A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736278-02B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-02C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-02D	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736278-02E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-02F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-02G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()

**Project Name:** US WIND  
**Project Number:** U167-022

**Serial\_No:**11171716:20  
**Lab Number:** L1736278  
**Report Date:** 11/17/17

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-03A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736278-03B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-03C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-03D	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736278-03E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1736278-03F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1736278-03G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1736278-04A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)

**Project Name:** US WIND  
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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-04B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-04C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-04D	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736278-04E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-04F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-04G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-05A	Glass 250ml/8oz unpreserved	C	NA		2.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)



**Project Name:** US WIND  
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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-05B	Glass 500ml/16oz unpreserved	C	NA		2.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-05C	Amber 120ml unpreserved	C	NA		2.7	Y	Absent		SUB-DIOXIN-1613B(365),SUB-PCB-1668()
L1736278-05E	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-05F	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-05G	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-06A	Glass 250ml/8oz unpreserved	C	NA		2.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)

\*Values in parentheses indicate holding time in days



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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-06B	Glass 500ml/16oz unpreserved	C	NA		2.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-06C	Amber 120ml unpreserved	C	NA		2.7	Y	Absent		SUB-DIOXIN-1613B(365),SUB-PCB-1668()
L1736278-06E	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-06F	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-06G	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-07A	Glass 250ml/8oz unpreserved	C	NA		2.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)

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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-07B	Glass 500ml/16oz unpreserved	C	NA		2.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-07C	Amber 120ml unpreserved	C	NA		2.7	Y	Absent		SUB-DIOXIN-1613B(365),SUB-PCB-1668()
L1736278-07E	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-07F	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-07G	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-08A	Glass 250ml/8oz unpreserved	C	NA		2.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)

\*Values in parentheses indicate holding time in days



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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-08B	Glass 500ml/16oz unpreserved	C	NA		2.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-08C	Amber 120ml unpreserved	C	NA		2.7	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-08D	Glass 120ml/4oz unpreserved	C	NA		2.7	Y	Absent		SUB-PCB-1668()
L1736278-08E	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-08F	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-08G	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-09A	Glass 250ml/8oz unpreserved	B	NA		2.5	Y	Absent		TPHOS-4500(28),NH3-4500(28)

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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-09B	Glass 500ml/16oz unpreserved	B	NA		2.5	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-09C	Amber 120ml unpreserved	B	NA		2.5	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-09D	Glass 120ml/4oz unpreserved	B	NA		2.5	Y	Absent		SUB-PCB-1668()
L1736278-09E	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-09F	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-09G	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-10A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)

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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-10B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-10C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-10D	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736278-10E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-10F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-10G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-11A	Glass 250ml/8oz unpreserved	B	NA		2.5	Y	Absent		TPHOS-4500(28),NH3-4500(28)

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L1736278-11B	Glass 500ml/16oz unpreserved	B	NA		2.5	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-11C	Amber 120ml unpreserved	B	NA		2.5	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-11D	Glass 120ml/4oz unpreserved	B	NA		2.5	Y	Absent		SUB-PCB-1668()
L1736278-11E	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-11F	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-11G	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-12A	Glass 250ml/8oz unpreserved	B	NA		2.5	Y	Absent		TPHOS-4500(28),NH3-4500(28)

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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-12B	Glass 500ml/16oz unpreserved	B	NA		2.5	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-12C	Amber 120ml unpreserved	B	NA		2.5	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-12D	Glass 120ml/4oz unpreserved	B	NA		2.5	Y	Absent		SUB-PCB-1668()
L1736278-12E	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-12F	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-12G	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-13A	Glass 250ml/8oz unpreserved	B	NA		2.5	Y	Absent		TPHOS-4500(28),NH3-4500(28)



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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-13B	Glass 500ml/16oz unpreserved	B	NA		2.5	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-13C	Amber 120ml unpreserved	B	NA		2.5	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-13D	Glass 120ml/4oz unpreserved	B	NA		2.5	Y	Absent		SUB-PCB-1668()
L1736278-13E	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-13F	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-13G	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-14A	Glass 250ml/8oz unpreserved	B	NA		2.5	Y	Absent		TPHOS-4500(28),NH3-4500(28)

\*Values in parentheses indicate holding time in days



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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-14B	Glass 500ml/16oz unpreserved	B	NA		2.5	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-14C	Amber 120ml unpreserved	B	NA		2.5	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-14D	Glass 120ml/4oz unpreserved	B	NA		2.5	Y	Absent		SUB-PCB-1668()
L1736278-14E	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-14F	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-14G	Plastic 8oz unpreserved for Grain Size	B	NA		2.5	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-15A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736278-15A1	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736278-15A2	Glass 250ml/8oz unpreserved	C	NA		2.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)

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**Lab Number:** L1736278  
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**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1736278-15B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-15B1	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-15B2	Glass 500ml/16oz unpreserved	C	NA		2.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-15C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365),SUB-PCB-1668()
L1736278-15C1	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365),SUB-PCB-1668()

\*Values in parentheses indicate holding time in days



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**Project Number:** U167-022

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**Lab Number:** L1736278  
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**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1736278-15C2	Amber 120ml unpreserved	C	NA		2.7	Y	Absent		SUB-DIOXIN-1613B(365),SUB-PCB-1668()
L1736278-15E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-15F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-15G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-16A	Glass 250ml/8oz unpreserved	C	NA		2.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736278-16B	Glass 500ml/16oz unpreserved	C	NA		2.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-16C	Amber 120ml unpreserved	C	NA		2.7	Y	Absent		SUB-DIOXIN-1613B(365),SUB-PCB-1668()
L1736278-16E	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()

**Project Name:** US WIND  
**Project Number:** U167-022

**Serial\_No:**11171716:20  
**Lab Number:** L1736278  
**Report Date:** 11/17/17

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1736278-16F	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTEBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-16G	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTEBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-17A	Glass 250ml/8oz unpreserved	C	NA		2.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736278-17B	Glass 500ml/16oz unpreserved	C	NA		2.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-17C	Amber 120ml unpreserved	C	NA		2.7	Y	Absent		SUB-DIOXIN-1613B(365),SUB-PCB-1668()
L1736278-17E	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTEBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736278-17F	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTEBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()

**Project Name:** US WIND  
**Project Number:** U167-022

**Serial\_No:**11171716:20  
**Lab Number:** L1736278  
**Report Date:** 11/17/17

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736278-17G	Plastic 8oz unpreserved for Grain Size	C	NA		2.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1736278-18A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736278-18B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736278-18C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736278-18D	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

**Report Format:** DU Report with 'J' Qualifiers



**Project Name:** US WIND  
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#### Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers





**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736278  
**Report Date:** 11/17/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 12 Annual Book of ASTM Standards. (American Society for Testing and Materials) ASTM International.
- 13 Determination of Total Organic Carbon in Sediment. U.S. EPA, Region II. July 27, 1988.
- 91 Analysis of Soot following ES&T publications by Accardi-Dey and Gschwend, 2003; and Gustafsson (et. al.), 1997.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



# **ASTM D6913/D7928**

## **GRAIN SIZE ANALYSIS**



## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-01

Sample Number: L1736278-01

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 47.09  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
47.09	0.00	.75"	0.00	0.00	100.0
		#4	0.54	0.00	98.9
		#10	3.72	0.00	91.0
		#20	4.69	0.00	81.0
		#40	8.48	0.00	63.0
		#60	7.86	0.00	46.3
		#140	4.81	0.00	36.1
		#200	0.93	0.00	34.1

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 34.1  
 Weight of hydrometer sample = 61.83  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0095	1.0098	0.0133	9.5	13.8	0.0349	8.7
5.00	22.2	1.0090	1.0093	0.0133	9.0	13.9	0.0222	8.2
15.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0134	3.8
30.00	22.2	1.0020	1.0023	0.0133	2.0	15.8	0.0096	2.0
60.00	22.2	1.0015	1.0018	0.0133	1.5	15.9	0.0068	1.6
240.00	22.2	1.0005	1.0008	0.0133	0.5	16.2	0.0034	0.7
1440.00	22.2	1.0005	1.0008	0.0133	0.5	16.2	0.0014	0.7

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.1	1.1	7.9	28.0	28.9	64.8	32.9	1.2	34.1

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0150	0.0373	0.0438	0.0498	0.0643	0.1827	0.2852	0.3881	0.8066	1.1038	1.8031	3.0113

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.61	10.41	0.29

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## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-02

Sample Number: L1736278-02

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 34.30  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
34.30	0.00	.75"	0.00	0.00	100.0
		#4	7.43	0.00	78.3
		#10	5.12	0.00	63.4
		#20	2.31	0.00	56.7
		#40	1.46	0.00	52.4
		#60	1.13	0.00	49.1
		#140	1.95	0.00	43.4
		#200	0.37	0.00	42.4

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 42.4

Weight of hydrometer sample = 39.91

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0060	1.0063	0.0133	6.0	14.7	0.0360	10.7
5.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0230	9.0
15.00	22.2	1.0045	1.0048	0.0133	4.5	15.1	0.0133	8.2
30.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0095	7.3
60.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0067	7.3
240.00	22.2	1.0035	1.0038	0.0133	3.5	15.4	0.0034	6.4
1440.00	22.2	1.0030	1.0033	0.0133	3.0	15.5	0.0014	5.6

## Fractional Components

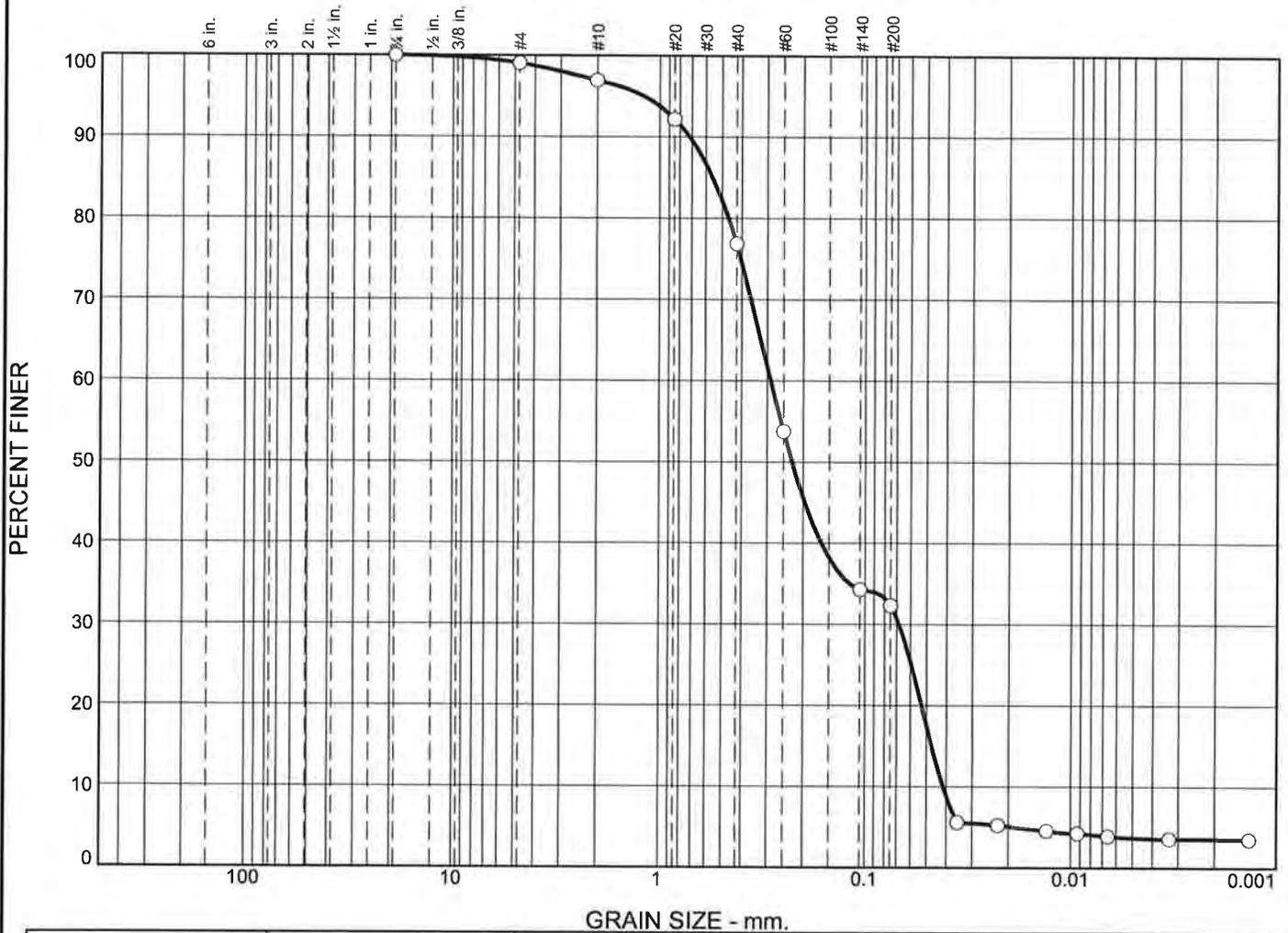
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	21.7	21.7	14.9	11.0	10.0	35.9	35.3	7.1	42.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0307	0.0408	0.0455	0.0551	0.0688	0.2807	1.4282	5.2095	6.9890	9.5989	13.4452

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.57	46.52	0.07

Alpha Analytical

# Particle Size Distribution Report



%	+3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
<input type="radio"/>	0.0	0.0	1.0	2.1	20.1	44.5	28.6	3.7

	Colloids	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input checked="" type="checkbox"/>				0.5558	0.2886	0.2271	0.0682	0.0470	0.0415	0.39	6.96

Material Description	USCS	AASHTO
<input type="radio"/>		

<b>Project No.</b> <b>Project:</b> <input type="radio"/> <b>Source of Sample:</b> VC-IRB-03-S1 <b>Sample Number:</b> L1736278-03  <b>Date:</b> <input type="radio"/>	<b>Client:</b>  <b>Remarks:</b>	
<b>Alpha Analytical</b> <b>Mansfield, MA</b>		<b>Figure</b>

## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-03-S1

Sample Number: L1736278-03

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 42.73  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
42.73	0.00	.75"	0.00	0.00	100.0
		#4	0.41	0.00	99.0
		#10	0.90	0.00	96.9
		#20	2.03	0.00	92.2
		#40	6.56	0.00	76.8
		#60	9.86	0.00	53.8
		#140	8.31	0.00	34.3
		#200	0.85	0.00	32.3

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 32.3

Weight of hydrometer sample = 77.04

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0080	1.0083	0.0133	8.0	14.2	0.0354	5.6
5.00	22.2	1.0075	1.0078	0.0133	7.5	14.3	0.0225	5.2
15.00	22.2	1.0065	1.0068	0.0133	6.5	14.6	0.0131	4.6
30.00	22.2	1.0060	1.0063	0.0133	6.0	14.7	0.0093	4.2
60.00	22.2	1.0055	1.0058	0.0133	5.5	14.8	0.0066	3.9
240.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0033	3.6
1440.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0014	3.6

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.0	1.0	2.1	20.1	44.5	66.7	28.6	3.7	32.3

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0188	0.0415	0.0470	0.0528	0.0682	0.1629	0.2271	0.2886	0.4655	0.5558	0.7191	1.1958

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.22	6.96	0.39

Alpha Analytical





## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-03-S2

Sample Number: L1736278-04

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 36.23  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
36.23	0.00	.75"	0.00	0.00	100.0
		#4	0.22	0.00	99.4
		#10	2.24	0.00	93.2
		#20	2.56	0.00	86.1
		#40	3.97	0.00	75.2
		#60	4.11	0.00	63.8
		#140	3.47	0.00	54.3
		#200	0.67	0.00	52.4

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 52.4  
 Weight of hydrometer sample = 37.88  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0367	9.5
5.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0232	9.5
15.00	22.2	1.0035	1.0038	0.0133	3.5	15.4	0.0134	8.4
30.00	22.2	1.0030	1.0033	0.0133	3.0	15.5	0.0095	7.3
60.00	22.2	1.0030	1.0033	0.0133	3.0	15.5	0.0068	7.3
240.00	22.2	1.0030	1.0033	0.0133	3.0	15.5	0.0034	7.3
1440.00	22.2	1.0030	1.0033	0.0133	3.0	15.5	0.0014	7.3

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.6	0.6	6.2	18.0	22.8	47.0	45.1	7.3	52.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0372	0.0414	0.0449	0.0517	0.0593	0.0704	0.1899	0.5511	0.7729	1.2872	2.5188

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.11	5.11	0.38



## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-04

Sample Number: L1736278-05

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 50.21  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
50.21	0.00	.75"	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	1.81	0.00	96.4
		#20	2.37	0.00	91.7
		#40	2.18	0.00	87.3
		#60	1.86	0.00	83.6
		#140	3.20	0.00	77.3
		#200	1.17	0.00	74.9

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 74.9  
 Weight of hydrometer sample = 64.70  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0120	1.0123	0.0133	12.0	13.1	0.0340	22.8
5.00	22.2	1.0100	1.0103	0.0133	10.0	13.6	0.0219	19.1
15.00	22.2	1.0080	1.0083	0.0133	8.0	14.2	0.0129	15.4
30.00	22.2	1.0065	1.0068	0.0133	6.5	14.6	0.0093	12.6
60.00	22.2	1.0055	1.0058	0.0133	5.5	14.8	0.0066	10.8
240.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0033	8.0
1440.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0014	8.0

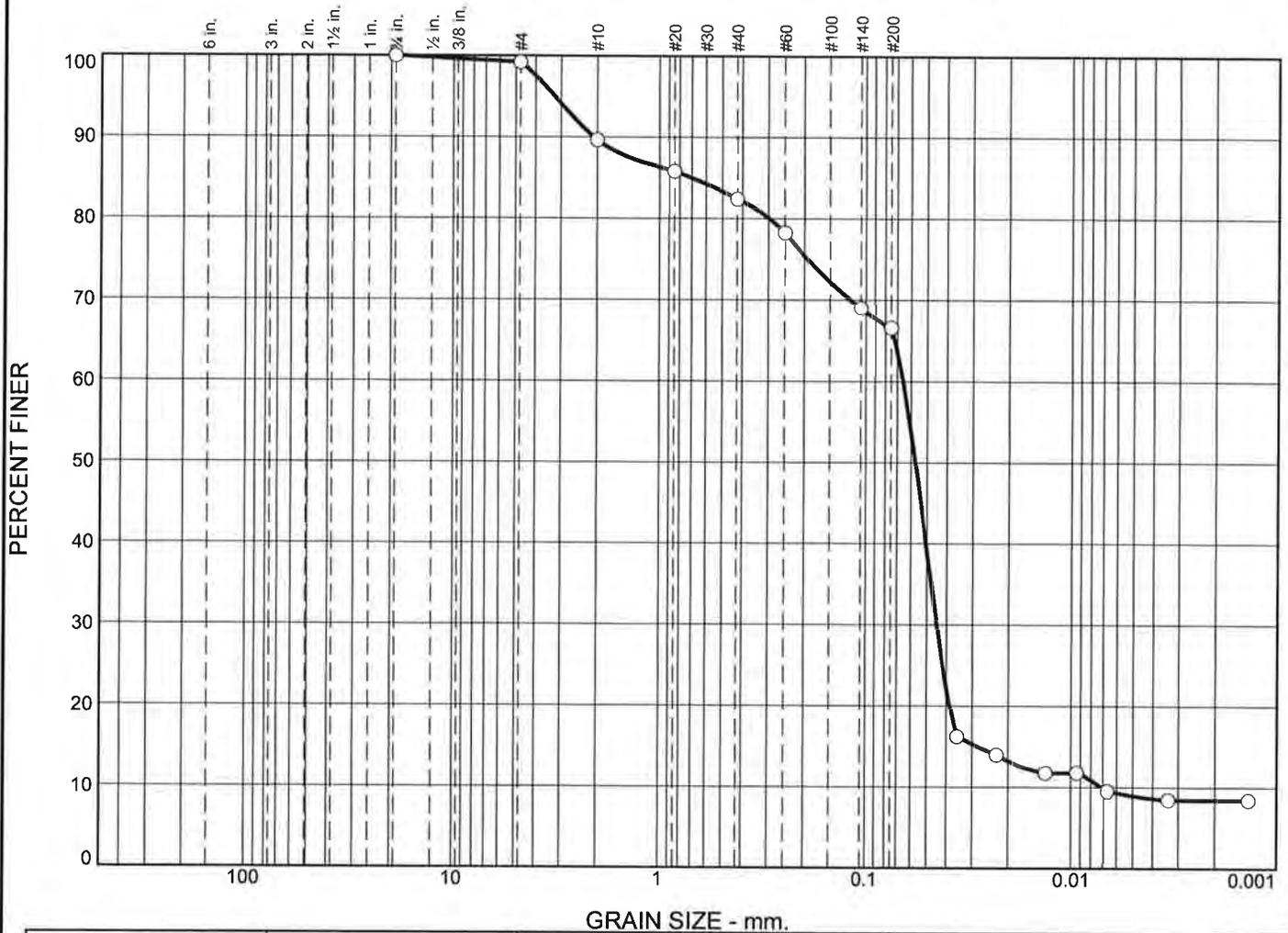
## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	3.6	9.1	12.4	25.1	65.5	9.4	74.9

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0057	0.0124	0.0245	0.0391	0.0449	0.0508	0.0577	0.1556	0.2950	0.6500	1.5298

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.55	10.19	4.67

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	9.6	7.2	15.8	57.6	9.0

Colloids	LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
			0.7021	0.0657	0.0572	0.0448	0.0280	0.0071	4.29	9.22

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b> <input type="radio"/> <b>Source of Sample:</b> VC-IRB-05-S1 <b>Sample Number:</b> L1736278-06  <b>Date:</b> <input type="radio"/>	<b>Client:</b>  <b>Remarks:</b>
<b>Alpha Analytical</b> <b>Mansfield, MA</b>	<b>Figure</b>

## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-05-S1

Sample Number: L1736278-06

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 34.37  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
34.37	0.00	.75"	0.00	0.00	100.0
		#4	0.27	0.00	99.2
		#10	3.29	0.00	89.6
		#20	1.33	0.00	85.8
		#40	1.16	0.00	82.4
		#60	1.43	0.00	78.2
		#140	3.19	0.00	69.0
		#200	0.82	0.00	66.6

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 66.6

Weight of hydrometer sample = 47.93

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0070	1.0073	0.0133	7.0	14.4	0.0357	16.2
5.00	22.2	1.0060	1.0063	0.0133	6.0	14.7	0.0228	14.0
15.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0133	11.8
30.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0094	11.8
60.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0067	9.6
240.00	22.2	1.0035	1.0038	0.0133	3.5	15.4	0.0034	8.4
1440.00	22.2	1.0035	1.0038	0.0133	3.5	15.4	0.0014	8.4

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.8	0.8	9.6	7.2	15.8	32.6	57.6	9.0	66.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0071	0.0280	0.0387	0.0448	0.0507	0.0572	0.0657	0.2969	0.7021	2.0814	3.2265

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.87	9.22	4.29



## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-05-S2

Sample Number: L1736278-07

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 16.09  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
16.09	0.00	.75"	0.00	0.00	100.0
		#4	2.30	0.00	85.7
		#10	3.57	0.00	63.5
		#20	0.97	0.00	57.5
		#40	0.46	0.00	54.6
		#60	0.23	0.00	53.2
		#140	0.29	0.00	51.4
		#200	0.09	0.00	50.8

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 50.8

Weight of hydrometer sample = 13.32

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0000	1.0003	0.0133	0.0	16.3	0.0379	1.7
5.00	22.2	1.0000	1.0003	0.0133	0.0	16.3	0.0240	1.7
15.00	22.2	1.0000	1.0003	0.0133	0.0	16.3	0.0138	1.7
30.00	22.2	1.0000	1.0003	0.0133	0.0	16.3	0.0098	1.7
60.00	22.2	1.0000	1.0003	0.0133	0.0	16.3	0.0069	1.7
240.00	22.2	1.0000	1.0003	0.0133	0.0	16.3	0.0035	1.7
1440.00	22.2	1.0000	1.0003	0.0133	0.0	16.3	0.0014	1.7

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	14.3	14.3	22.2	8.9	3.8	34.9	49.1	1.7	50.8

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0405	0.0437	0.0466	0.0494	0.0553	0.0623	0.0734	1.5187	3.8116	4.6116	5.8488	8.3318

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
2.31	34.74	0.05





## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-06

Sample Number: L1736278-08

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 32.73  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
32.73	0.00	.75"	0.00	0.00	100.0
		#4	0.10	0.00	99.7
		#10	2.54	0.00	91.9
		#20	2.51	0.00	84.3
		#40	1.72	0.00	79.0
		#60	1.25	0.00	75.2
		#140	2.35	0.00	68.0
		#200	0.70	0.00	65.9

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 65.9  
 Weight of hydrometer sample = 39.93  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0075	1.0078	0.0133	7.5	14.3	0.0355	20.6
5.00	22.2	1.0070	1.0073	0.0133	7.0	14.4	0.0226	19.3
15.00	22.2	1.0060	1.0063	0.0133	6.0	14.7	0.0132	16.6
30.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0094	14.0
60.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0066	14.0
240.00	22.2	1.0045	1.0048	0.0133	4.5	15.1	0.0033	12.7
1440.00	22.2	1.0045	1.0048	0.0133	4.5	15.1	0.0014	12.7

## Fractional Components

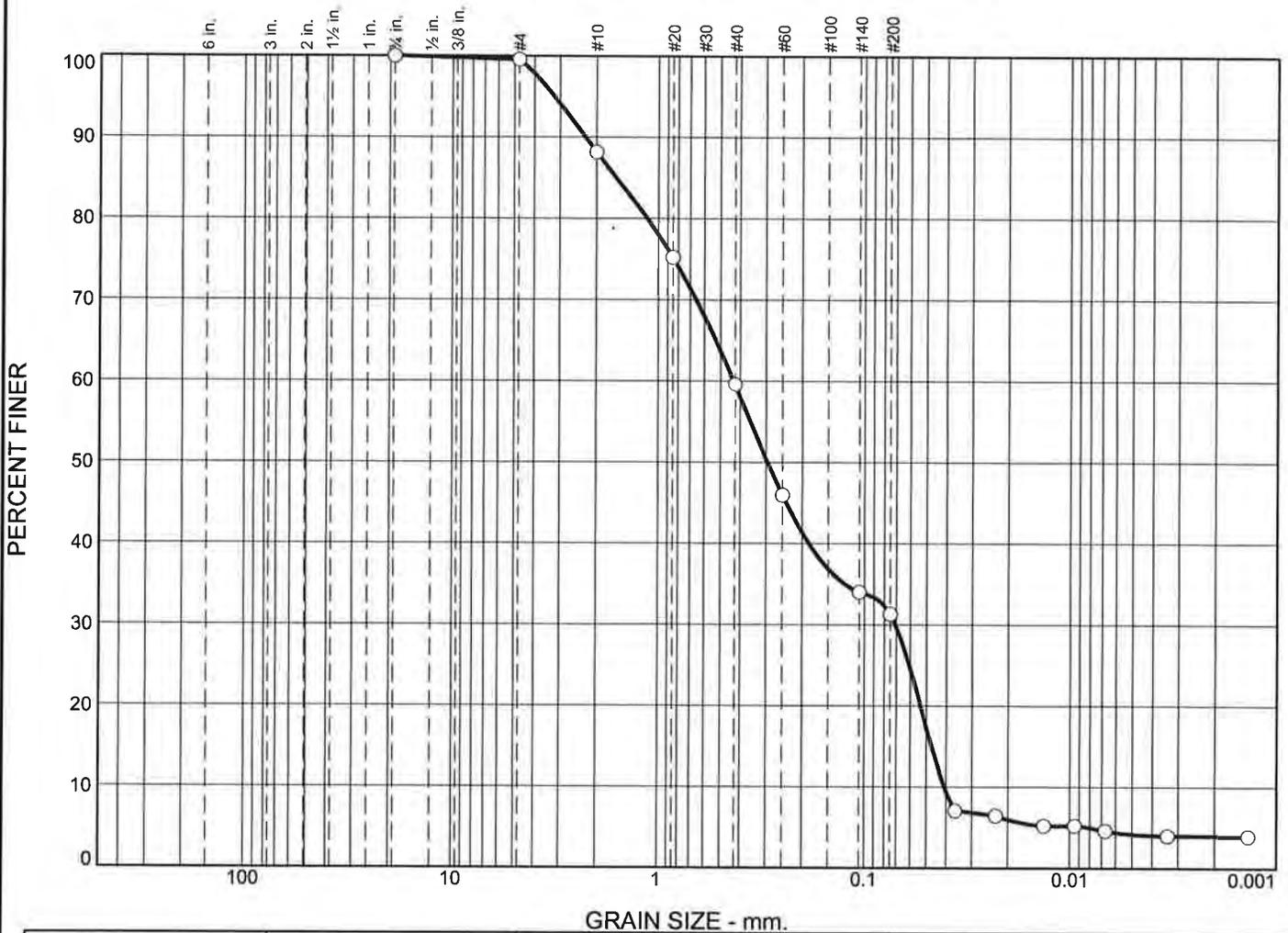
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.3	0.3	7.8	12.9	13.1	33.8	52.6	13.3	65.9

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
		0.0110	0.0278	0.0428	0.0493	0.0564	0.0657	0.4921	0.9283	1.6362	2.7117

## Fineness Modulus

0.91

# Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	11.4	28.7	28.2	27.1	4.2

Colloids	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
			1.6004	0.4325	0.2954	0.0708	0.0472	0.0409	0.28	10.58

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b> <input type="radio"/> <b>Source of Sample:</b> VC-IRB-07-ALT-S1 <b>Sample Number:</b> L1736278-09  <b>Date:</b> <input type="radio"/>	<b>Client:</b>  <b>Remarks:</b>
<b>Alpha Analytical</b> <b>Mansfield, MA</b>	<b>Figure</b>

## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-07-ALT-S1

Sample Number: L1736278-09

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 32.41  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
32.41	0.00	.75"	0.00	0.00	100.0
		#4	0.14	0.00	99.6
		#10	3.70	0.00	88.2
		#20	4.20	0.00	75.2
		#40	5.07	0.00	59.5
		#60	4.41	0.00	45.9
		#140	3.86	0.00	34.0
		#200	0.88	0.00	31.3

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 31.3  
 Weight of hydrometer sample = 41.21  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0055	1.0058	0.0133	5.5	14.8	0.0362	7.1
5.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0230	6.4
15.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0134	5.2
30.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0095	5.2
60.00	22.2	1.0035	1.0038	0.0133	3.5	15.4	0.0067	4.6
240.00	22.2	1.0030	1.0033	0.0133	3.0	15.5	0.0034	4.0
1440.00	22.2	1.0030	1.0033	0.0133	3.0	15.5	0.0014	4.0

## Fractional Components

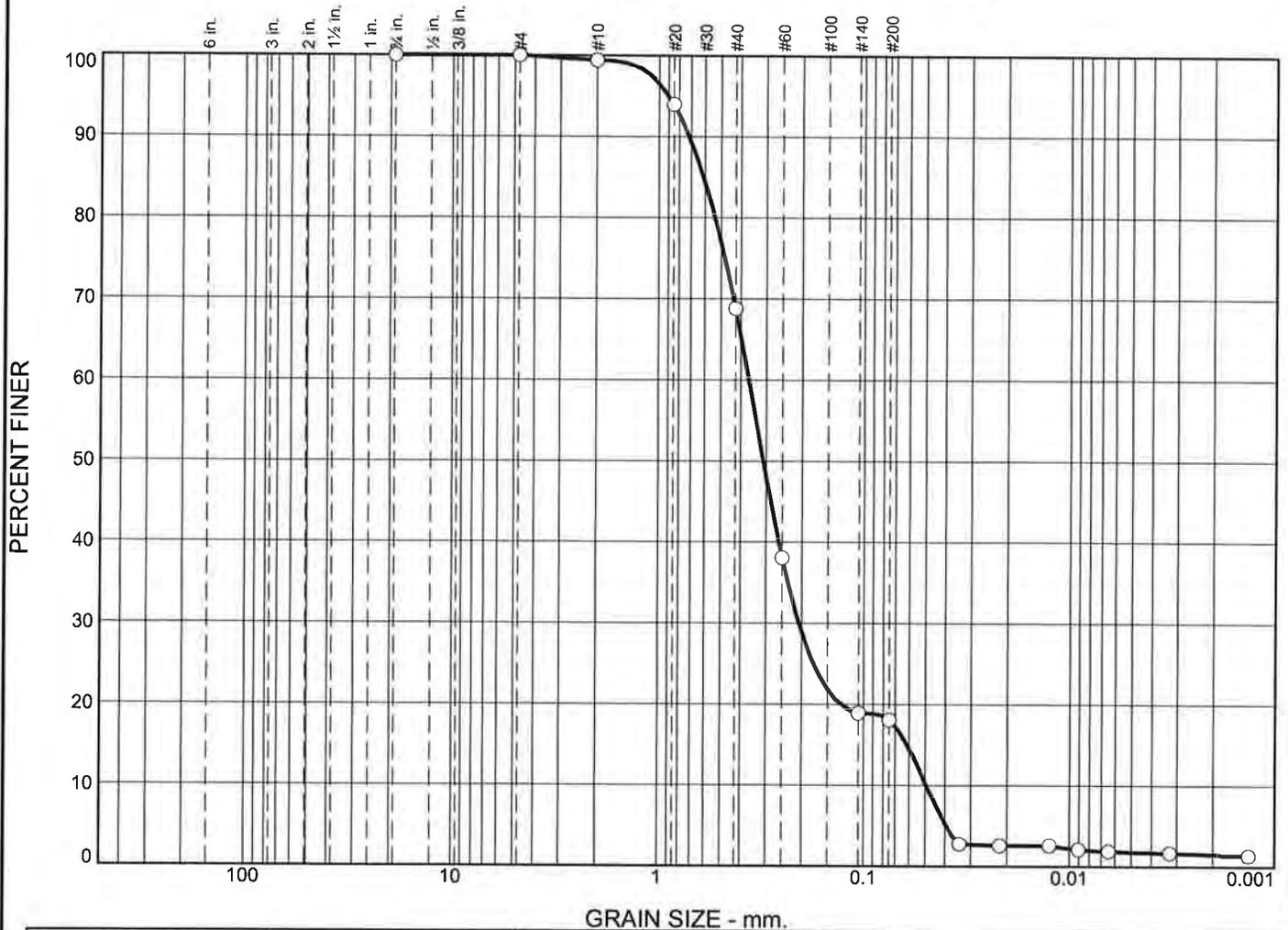
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.4	0.4	11.4	28.7	28.2	68.3	27.1	4.2	31.3

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0080	0.0409	0.0472	0.0535	0.0708	0.1857	0.2954	0.4325	1.1324	1.6004	2.2681	3.1979

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.74	10.58	0.28

Alpha Analytical

# Particle Size Distribution Report



GRAIN SIZE - mm.

%	+3"	% Gravel		% Sand			% Fines				
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay			
<input type="radio"/>	0.0	0.0	0.0	0.6	30.6	50.7	16.3	1.8			
<input checked="" type="checkbox"/>	Colloids	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input type="radio"/>				0.6110	0.3655	0.3100	0.2064	0.0614	0.0494	2.36	7.40

Material Description	USCS	AASHTO
<input type="radio"/>		

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p><input type="radio"/> <b>Source of Sample:</b> VC-IRB-07-ALT-S2                      <b>Sample Number:</b> L1736278-10</p> <p><b>Date:</b> <input type="radio"/></p>	<p><b>Remarks:</b></p>
<p><b>Alpha Analytical</b></p> <p><b>Mansfield, MA</b></p>	<p><b>Figure</b></p>

## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-07-ALT-S2

Sample Number: L1736278-10

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 89.80  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
89.80	0.00	.75"	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.51	0.00	99.4
		#20	4.96	0.00	93.9
		#40	22.58	0.00	68.8
		#60	27.59	0.00	38.0
		#140	17.12	0.00	19.0
		#200	0.79	0.00	18.1

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 18.1  
 Weight of hydrometer sample = 127.42  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0120	1.0123	0.0133	12.0	13.1	0.0340	2.8
5.00	22.2	1.0110	1.0113	0.0133	11.0	13.4	0.0217	2.6
15.00	22.2	1.0110	1.0113	0.0133	11.0	13.4	0.0125	2.6
30.00	22.2	1.0090	1.0093	0.0133	9.0	13.9	0.0090	2.1
60.00	22.2	1.0080	1.0083	0.0133	8.0	14.2	0.0065	1.9
240.00	22.2	1.0070	1.0073	0.0133	7.0	14.4	0.0033	1.7
1440.00	22.2	1.0060	1.0063	0.0133	6.0	14.7	0.0013	1.4

## Fractional Components

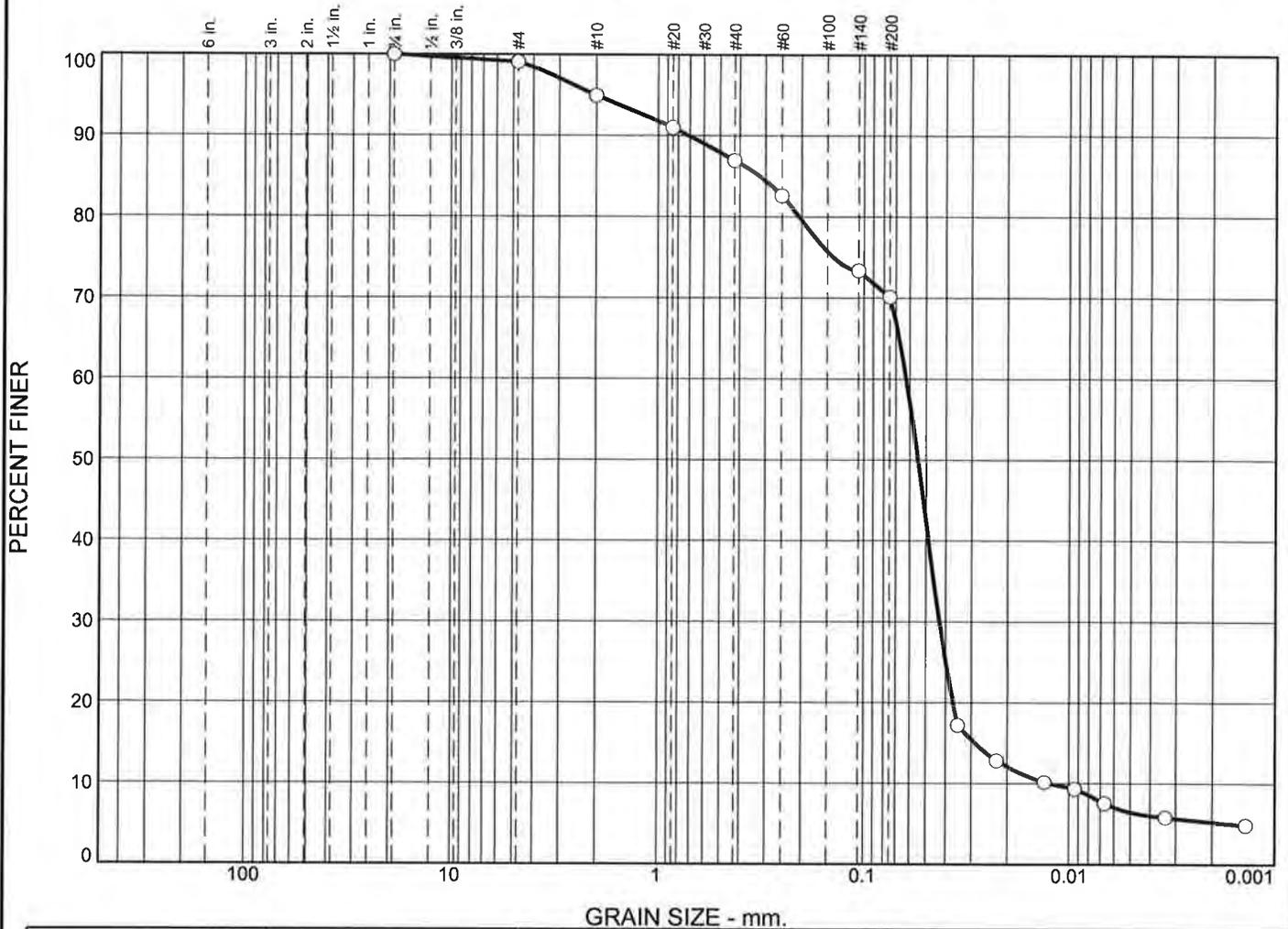
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.6	30.6	50.7	81.9	16.3	1.8	18.1

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0395	0.0494	0.0614	0.1285	0.2064	0.2599	0.3100	0.3655	0.5365	0.6110	0.7177	0.9036

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.48	7.40	2.36

Alpha Analytical

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	4.2	8.0	16.8	63.6	6.5

Colloids	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
			0.3230	0.0624	0.0548	0.0430	0.0286	0.0125	2.38	5.00

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b> <input type="radio"/> <b>Source of Sample:</b> VC-IRB-08-ALT-S1 <b>Sample Number:</b> L1736278-11  <b>Date:</b> <input type="radio"/>	<b>Client:</b>  <b>Remarks:</b>
<b>Alpha Analytical</b> <b>Mansfield, MA</b>	

Figure

## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-08-ALT-S1

Sample Number: L1736278-11

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 44.03  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
44.03	0.00	.75"	0.00	0.00	100.0
		#4	0.40	0.00	99.1
		#10	1.83	0.00	94.9
		#20	1.76	0.00	90.9
		#40	1.78	0.00	86.9
		#60	1.92	0.00	82.5
		#140	4.04	0.00	73.4
		#200	1.43	0.00	70.1

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 70.1  
 Weight of hydrometer sample = 63.78  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0095	1.0098	0.0133	9.5	13.8	0.0349	17.3
5.00	22.2	1.0070	1.0073	0.0133	7.0	14.4	0.0226	12.9
15.00	22.2	1.0055	1.0058	0.0133	5.5	14.8	0.0132	10.2
30.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0094	9.3
60.00	22.2	1.0040	1.0043	0.0133	4.0	15.2	0.0067	7.6
240.00	22.2	1.0030	1.0033	0.0133	3.0	15.5	0.0034	5.8
1440.00	22.2	1.0025	1.0028	0.0133	2.5	15.6	0.0014	4.9

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.9	0.9	4.2	8.0	16.8	29.0	63.6	6.5	70.1

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0015	0.0125	0.0286	0.0369	0.0430	0.0486	0.0548	0.0624	0.2061	0.3230	0.7128	2.0261

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.64	5.00	2.38

Alpha Analytical





## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-08-ALT-S2

Sample Number: L1736278-12

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 15.63  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
15.63	0.00	.75"	0.00	0.00	100.0
		#4	3.39	0.00	78.3
		#10	3.03	0.00	58.9
		#20	0.58	0.00	55.2
		#40	0.38	0.00	52.8
		#60	0.22	0.00	51.4
		#140	0.19	0.00	50.2
		#200	0.05	0.00	49.8

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 49.8  
 Weight of hydrometer sample = 11.76  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0020	1.0023	0.0133	2.0	15.8	0.0373	15.5
5.00	22.2	1.0020	1.0023	0.0133	2.0	15.8	0.0236	15.5
15.00	22.2	1.0020	1.0023	0.0133	2.0	15.8	0.0136	15.5
30.00	22.2	1.0020	1.0023	0.0133	2.0	15.8	0.0096	15.5
60.00	22.2	1.0020	1.0023	0.0133	2.0	15.8	0.0068	15.5
240.00	22.2	1.0020	1.0023	0.0133	2.0	15.8	0.0034	15.5
1440.00	22.2	1.0020	1.0023	0.0133	2.0	15.8	0.0014	15.5

## Fractional Components

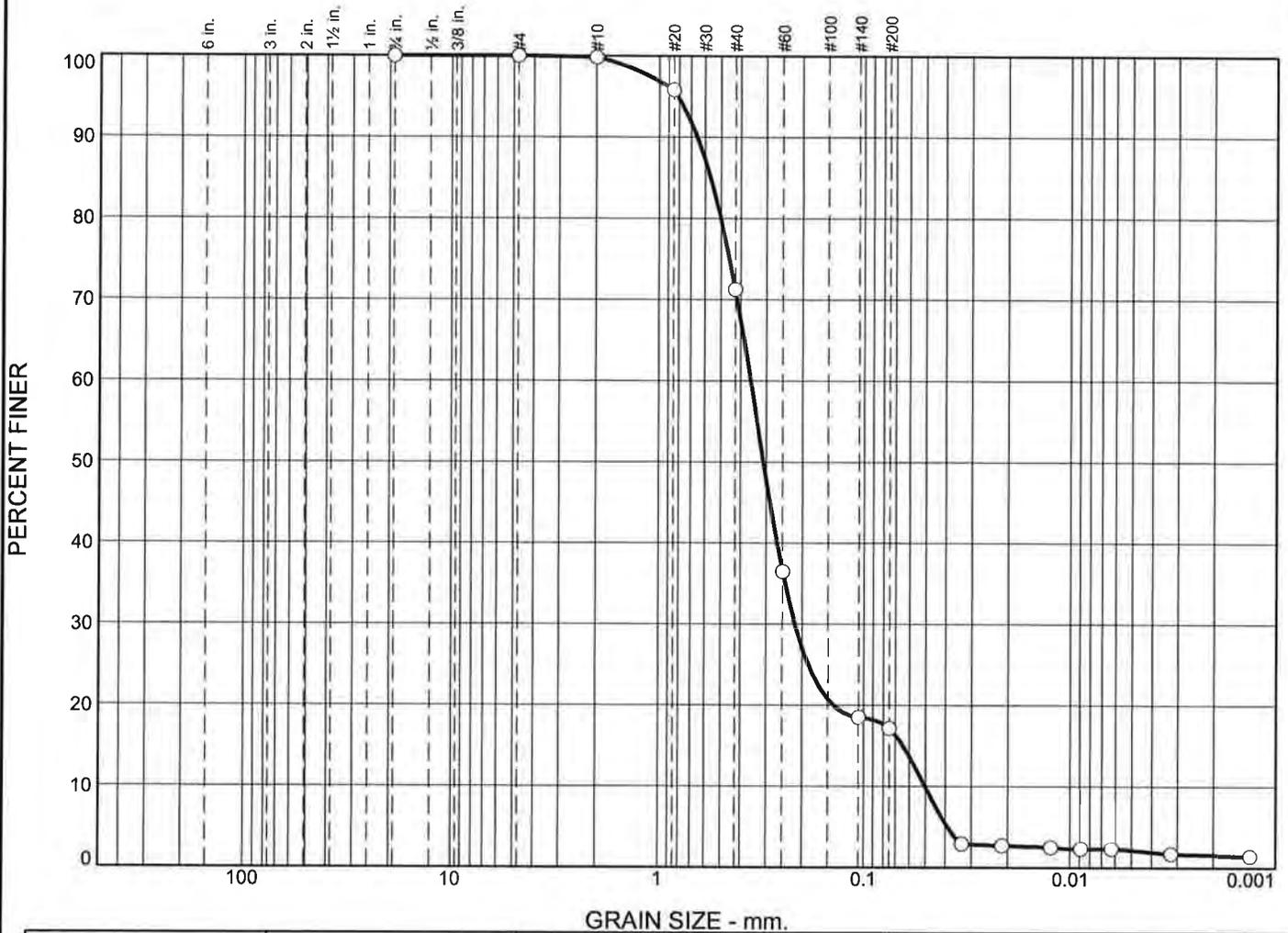
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	21.7	21.7	19.4	6.1	3.0	28.5	34.3	15.5	49.8

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
			0.0420	0.0503	0.0595	0.0903	2.1480	5.1186	6.5551	8.8210	12.6255

Fineness Modulus

2.57

# Particle Size Distribution Report



## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-08-ALT-S3

Sample Number: L1736278-13

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 89.51  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
89.51	0.00	.75"	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.16	0.00	99.8
		#20	3.64	0.00	95.8
		#40	21.92	0.00	71.3
		#60	31.13	0.00	36.5
		#140	16.05	0.00	18.6
		#200	1.26	0.00	17.1

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 17.1

Weight of hydrometer sample = 134.38

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0140	1.0143	0.0133	14.0	12.6	0.0333	2.9
5.00	22.2	1.0130	1.0133	0.0133	13.0	12.9	0.0213	2.7
15.00	22.2	1.0120	1.0123	0.0133	12.0	13.1	0.0124	2.5
30.00	22.2	1.0110	1.0113	0.0133	11.0	13.4	0.0089	2.3
60.00	22.2	1.0110	1.0113	0.0133	11.0	13.4	0.0063	2.3
240.00	22.2	1.0080	1.0083	0.0133	8.0	14.2	0.0032	1.7
1440.00	22.2	1.0070	1.0073	0.0133	7.0	14.4	0.0013	1.5

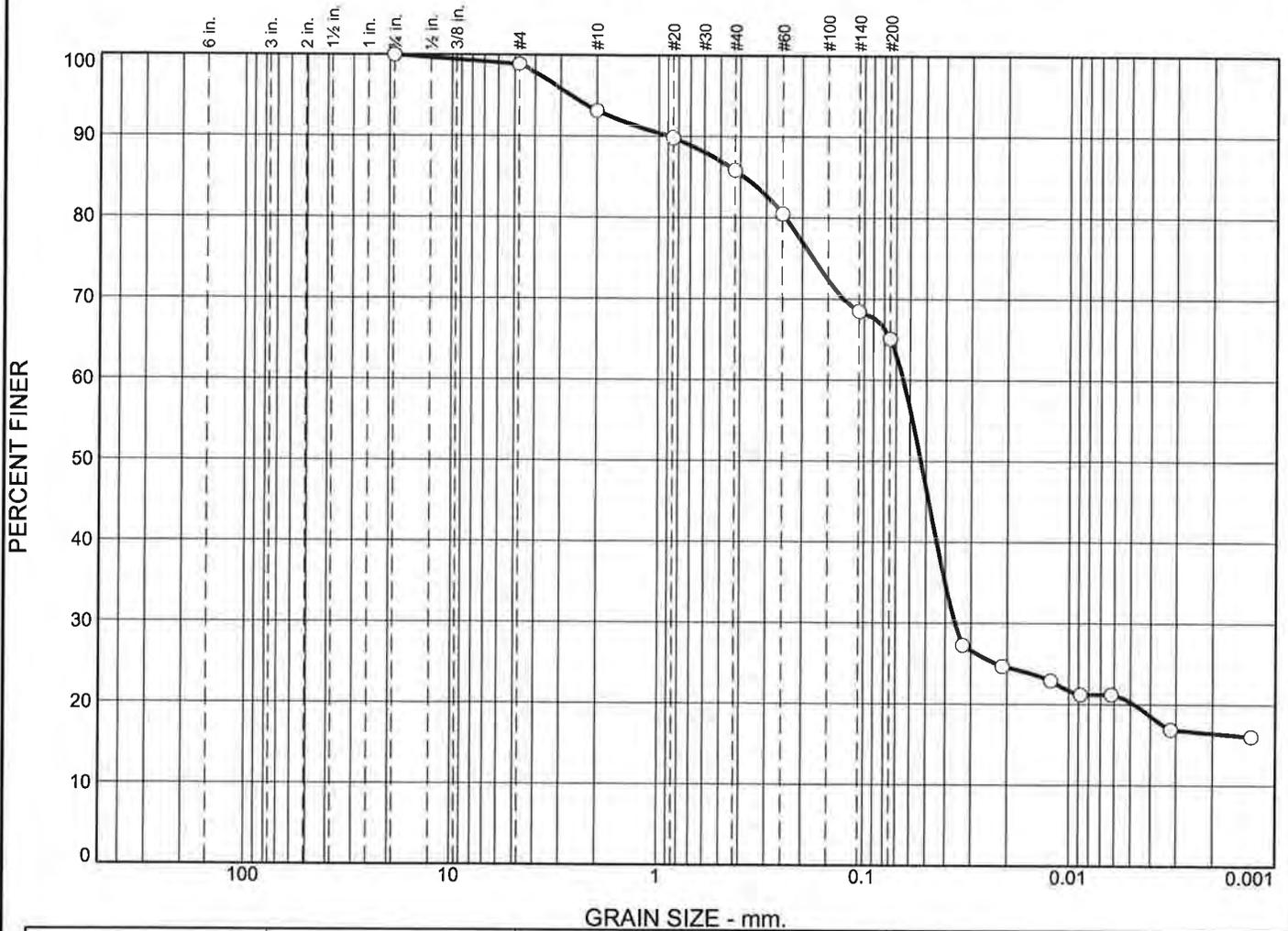
## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.2	28.5	54.2	82.9	14.9	2.2	17.1

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0391	0.0503	0.0644	0.1405	0.2175	0.2659	0.3101	0.3579	0.5009	0.5636	0.6546	0.8129

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.47	7.12	2.63

# Particle Size Distribution Report



GRAIN SIZE - mm.											
% +3"	% Gravel		% Sand			% Fines					
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay				
0.0	0.0	1.2	5.7	7.3	20.7	44.8	20.3				
<input checked="" type="checkbox"/>	<b>Colloids</b>	<b>LL</b>	<b>PL</b>	<b>D<sub>85</sub></b>	<b>D<sub>60</sub></b>	<b>D<sub>50</sub></b>	<b>D<sub>30</sub></b>	<b>D<sub>15</sub></b>	<b>D<sub>10</sub></b>	<b>C<sub>c</sub></b>	<b>C<sub>u</sub></b>
<input type="checkbox"/>			0.3854	0.0647	0.0530	0.0358					

Material Description	USCS	AASHTO
<input type="checkbox"/>		

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p><input type="checkbox"/> <b>Source of Sample:</b> VC-IRB-09-ALT      <b>Sample Number:</b> L1736278-14</p> <p><b>Date:</b> <input type="checkbox"/></p> <p style="text-align: center;"><b>Alpha Analytical</b></p> <p style="text-align: center;"><b>Mansfield, MA</b></p>	<p><b>Remarks:</b></p>          <p style="text-align: right;"><b>Figure</b></p>
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## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-09-ALT

Sample Number: L1736278-14

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 41.41  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
41.41	0.00	.75"	0.00	0.00	100.0
		#4	0.49	0.00	98.8
		#10	2.36	0.00	93.1
		#20	1.39	0.00	89.8
		#40	1.66	0.00	85.8
		#60	2.20	0.00	80.4
		#140	4.97	0.00	68.4
		#200	1.38	0.00	65.1

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 65.1  
 Weight of hydrometer sample = 60.57  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0155	1.0158	0.0133	15.5	12.2	0.0328	27.2
5.00	22.2	1.0140	1.0143	0.0133	14.0	12.6	0.0211	24.7
15.00	22.2	1.0130	1.0133	0.0133	13.0	12.9	0.0123	22.9
30.00	22.2	1.0120	1.0123	0.0133	12.0	13.1	0.0088	21.2
60.00	22.2	1.0120	1.0123	0.0133	12.0	13.1	0.0062	21.2
240.00	22.2	1.0095	1.0098	0.0133	9.5	13.8	0.0032	16.9
1440.00	22.2	1.0090	1.0093	0.0133	9.0	13.9	0.0013	16.0

## Fractional Components

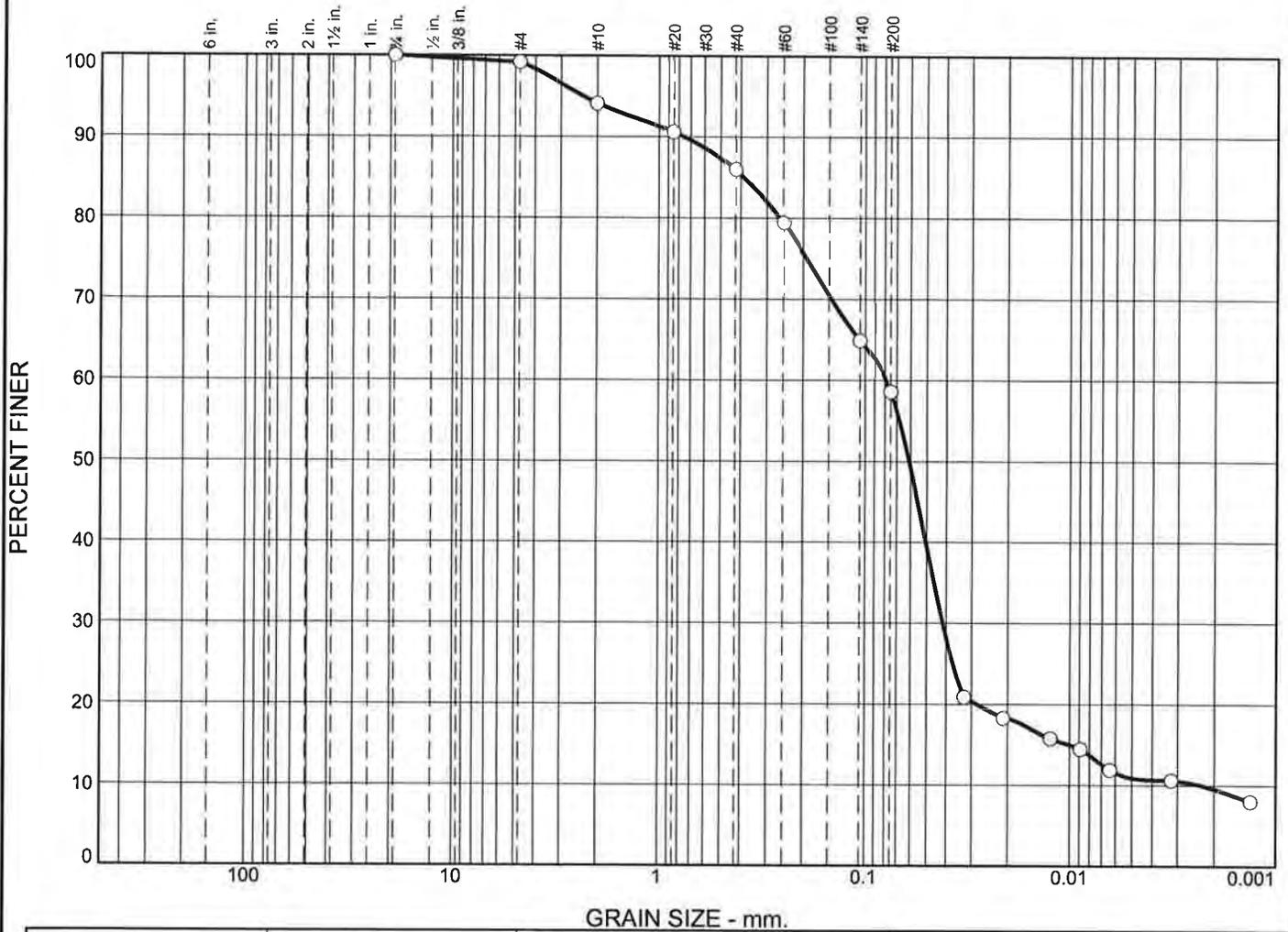
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.2	1.2	5.7	7.3	20.7	33.7	44.8	20.3	65.1

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
			0.0048	0.0358	0.0443	0.0530	0.0647	0.2424	0.3854	0.9024	2.6757

Fineness Modulus

0.74

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.8	5.1	8.2	27.3	47.7	10.9

Colloids	LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
			0.3886	0.0789	0.0609	0.0416	0.0099	0.0023	9.55	34.30

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b> ○ <b>Source of Sample:</b> VC-IRB-10 <b>Sample Number:</b> L1736278-15  <b>Date:</b> ○	<b>Client:</b>   <b>Alpha Analytical</b> <b>Mansfield, MA</b>	<b>Remarks:</b>     <b>Figure</b>
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## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-10

Sample Number: L1736278-15

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 50.74  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
50.74	0.00	.75"	0.00	0.00	100.0
		#4	0.41	0.00	99.2
		#10	2.58	0.00	94.1
		#20	1.79	0.00	90.6
		#40	2.38	0.00	85.9
		#60	3.30	0.00	79.4
		#140	7.35	0.00	64.9
		#200	3.20	0.00	58.6

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 58.6  
 Weight of hydrometer sample = 73.35  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0160	1.0163	0.0133	16.0	12.1	0.0326	20.9
5.00	22.2	1.0140	1.0143	0.0133	14.0	12.6	0.0211	18.3
15.00	22.2	1.0120	1.0123	0.0133	12.0	13.1	0.0124	15.8
30.00	22.2	1.0110	1.0113	0.0133	11.0	13.4	0.0089	14.5
60.00	22.2	1.0090	1.0093	0.0133	9.0	13.9	0.0064	11.9
240.00	22.2	1.0080	1.0083	0.0133	8.0	14.2	0.0032	10.6
1440.00	22.2	1.0060	1.0063	0.0133	6.0	14.7	0.0013	8.1

## Fractional Components

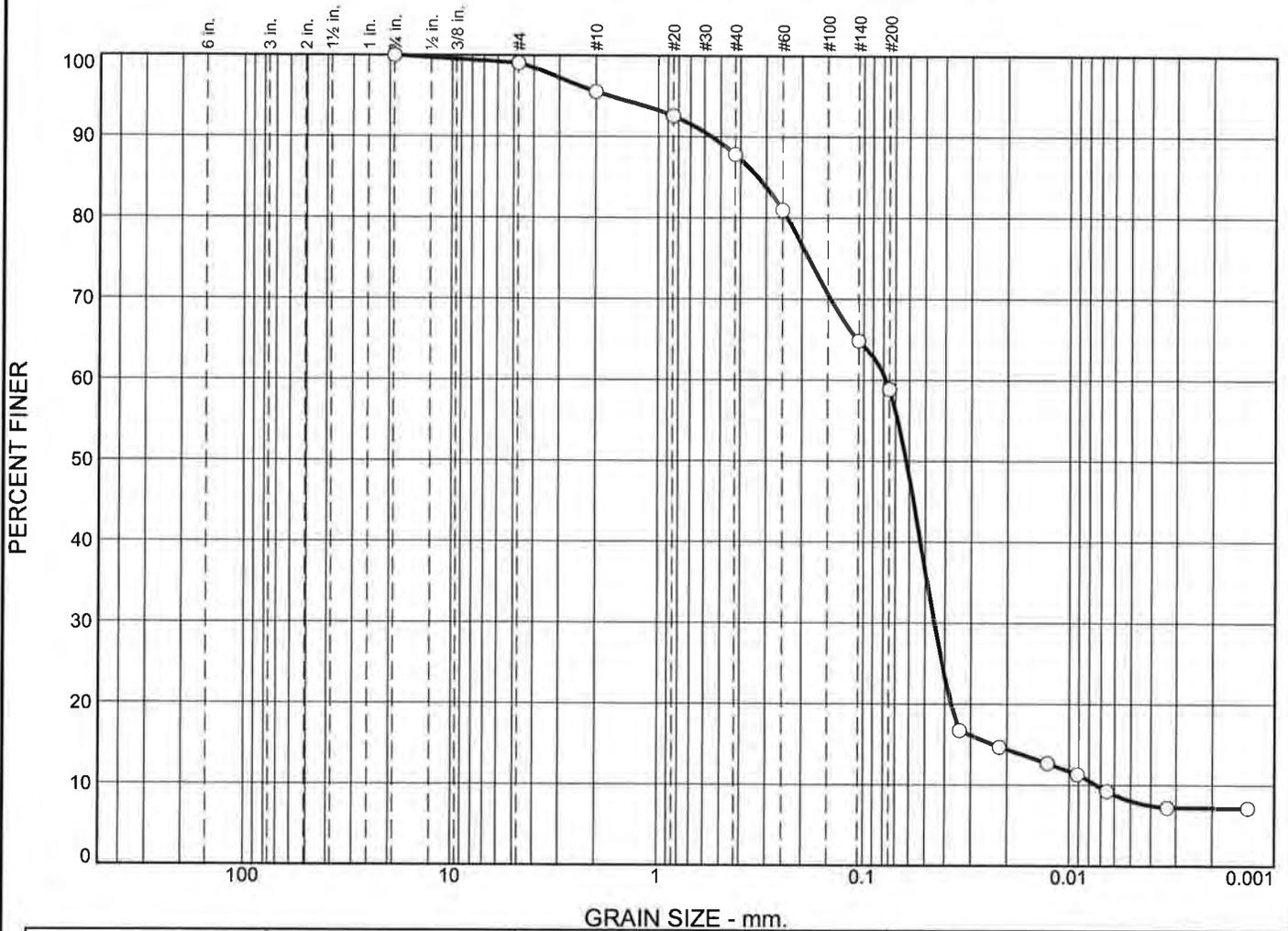
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.8	0.8	5.1	8.2	27.3	40.6	47.7	10.9	58.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0023	0.0099	0.0283	0.0416	0.0504	0.0609	0.0789	0.2604	0.3886	0.7564	2.3442

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.73	34.30	9.55



# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.9	3.6	7.7	28.9	50.9	8.0

Colloids	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
			0.3298	0.0778	0.0621	0.0451	0.0232	0.0074	3.55	10.58

Material Description	USCS	AASHTO

<b>Project No.</b> <b>Project:</b> <input type="radio"/> <b>Source of Sample:</b> VC-IRB-10 <b>Sample Number:</b> WG1060825-1  <b>Date:</b> <input type="radio"/>	<b>Client:</b>  <b>Alpha Analytical</b> <b>Mansfield, MA</b>	<b>Remarks:</b>  <b>Figure</b>
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## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-10

Sample Number: WG1060825-1

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 49.80  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
49.80	0.00	.75"	0.00	0.00	100.0
		#4	0.47	0.00	99.1
		#10	1.76	0.00	95.5
		#20	1.48	0.00	92.6
		#40	2.39	0.00	87.8
		#60	3.41	0.00	80.9
		#140	8.00	0.00	64.8
		#200	2.98	0.00	58.9

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 58.9  
 Weight of hydrometer sample = 69.19  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0120	1.0123	0.0133	12.0	13.1	0.0340	16.8
5.00	22.2	1.0105	1.0108	0.0133	10.5	13.5	0.0218	14.7
15.00	22.2	1.0090	1.0093	0.0133	9.0	13.9	0.0128	12.7
30.00	22.2	1.0080	1.0083	0.0133	8.0	14.2	0.0091	11.3
60.00	22.2	1.0065	1.0068	0.0133	6.5	14.6	0.0065	9.3
240.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0033	7.2
1440.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0014	7.2

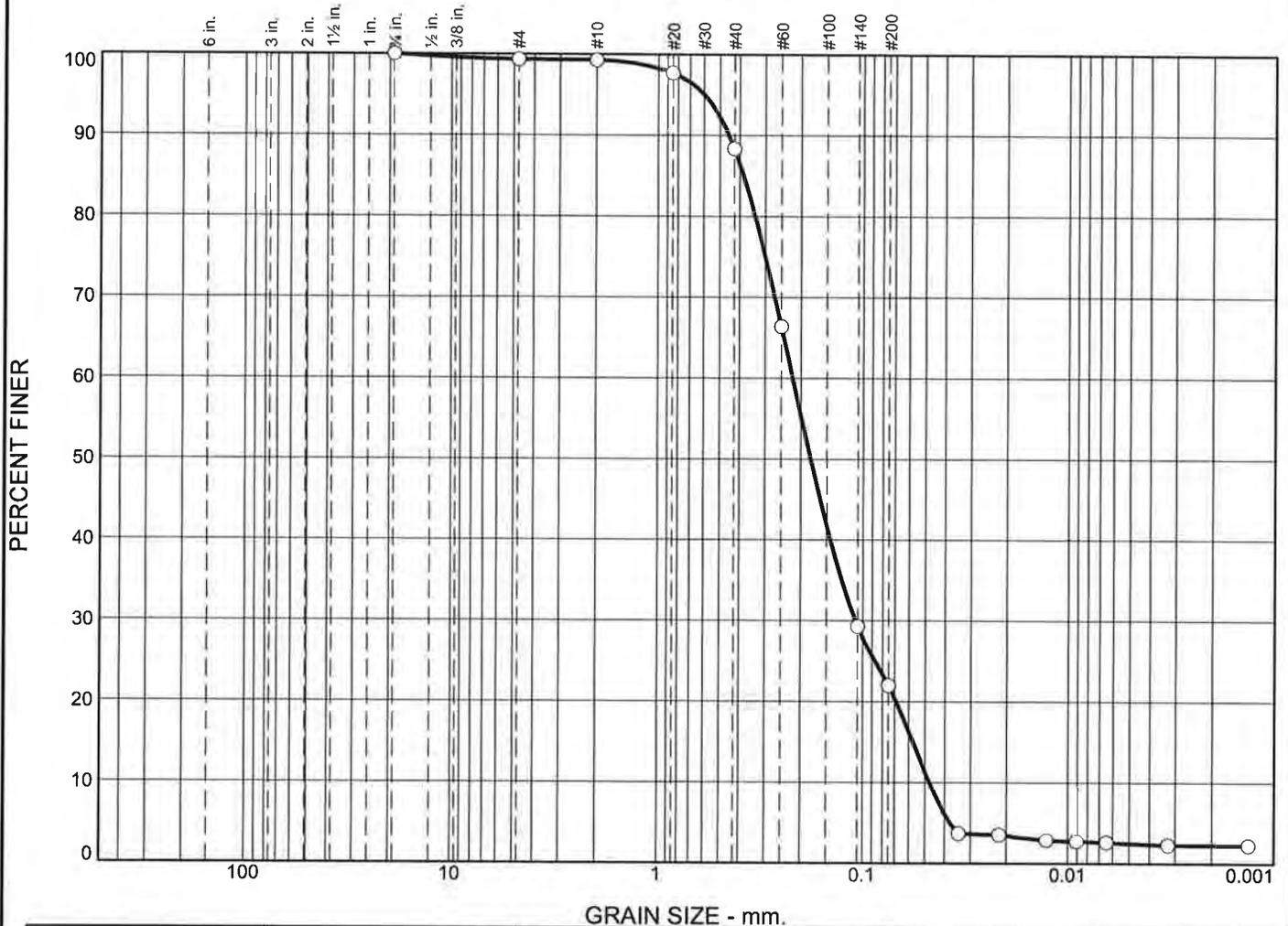
## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.9	0.9	3.6	7.7	28.9	40.2	50.9	8.0	58.9

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0074	0.0232	0.0373	0.0451	0.0528	0.0621	0.0778	0.2377	0.3298	0.5544	1.7219

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.66	10.58	3.55

# Particle Size Distribution Report



## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-12-S1

Sample Number: L1736278-16

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 69.76  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
69.76	0.00	.75"	0.00	0.00	100.0
		#4	0.46	0.00	99.3
		#10	0.04	0.00	99.3
		#20	1.15	0.00	97.6
		#40	6.53	0.00	88.3
		#60	15.30	0.00	66.3
		#140	25.84	0.00	29.3
		#200	5.10	0.00	22.0

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 22.0  
 Weight of hydrometer sample = 112.26  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0115	1.0118	0.0133	11.5	13.3	0.0342	3.7
5.00	22.2	1.0110	1.0113	0.0133	11.0	13.4	0.0217	3.5
15.00	22.2	1.0090	1.0093	0.0133	9.0	13.9	0.0128	2.9
30.00	22.2	1.0085	1.0088	0.0133	8.5	14.0	0.0091	2.8
60.00	22.2	1.0080	1.0083	0.0133	8.0	14.2	0.0065	2.6
240.00	22.2	1.0070	1.0073	0.0133	7.0	14.4	0.0033	2.3
1440.00	22.2	1.0070	1.0073	0.0133	7.0	14.4	0.0013	2.3

## Fractional Components

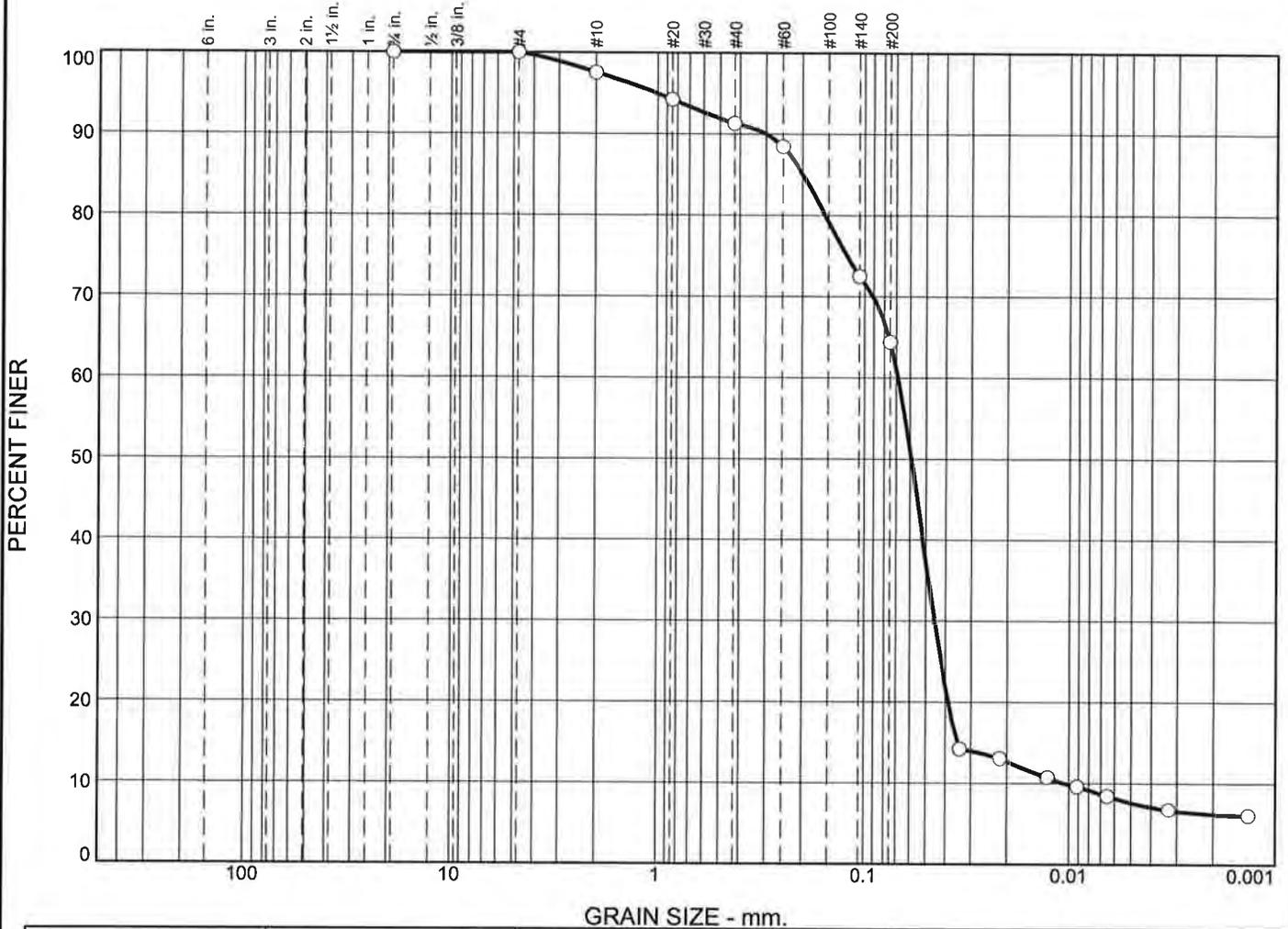
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.7	0.7	0.0	11.0	66.3	77.3	19.5	2.5	22.0

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0378	0.0476	0.0572	0.0689	0.1088	0.1441	0.1796	0.2200	0.3368	0.3838	0.4530	0.5964

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.91	4.62	1.13

Alpha Analytical

# Particle Size Distribution Report



% +3"		% Gravel		% Sand			% Fines				
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay			
<input type="radio"/>	0.0	0.0	0.0	2.5	6.2	26.9	56.8	7.6			
<input checked="" type="checkbox"/>	Colloids	LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
<input type="radio"/>				0.2000	0.0687	0.0591	0.0453	0.0348	0.0106	2.83	6.49

Material Description	USCS	AASHTO
<input type="radio"/>		

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p><input type="radio"/> <b>Source of Sample:</b> VC-IRB-12-S2                      <b>Sample Number:</b> L1736278-17</p> <p><b>Date:</b> <input type="radio"/></p> <p style="text-align: center;"><b>Alpha Analytical</b></p> <p style="text-align: center;"><b>Mansfield, MA</b></p>	<p><b>Remarks:</b></p>          <p style="text-align: center;"><b>Figure</b></p>
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## GRAIN SIZE DISTRIBUTION TEST DATA

11/13/2017

Location: VC-IRB-12-S2

Sample Number: L1736278-17

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 65.03  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
65.03	0.00	.75"	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	1.60	0.00	97.5
		#20	2.15	0.00	94.2
		#40	1.90	0.00	91.3
		#60	1.88	0.00	88.4
		#140	10.36	0.00	72.5
		#200	5.25	0.00	64.4

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 64.4  
 Weight of hydrometer sample = 89.25  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.2	1.0120	1.0123	0.0133	12.0	13.1	0.0340	14.2
5.00	22.2	1.0110	1.0113	0.0133	11.0	13.4	0.0217	13.1
15.00	22.2	1.0090	1.0093	0.0133	9.0	13.9	0.0128	10.8
30.00	22.2	1.0080	1.0083	0.0133	8.0	14.2	0.0091	9.6
60.00	22.2	1.0070	1.0073	0.0133	7.0	14.4	0.0065	8.4
240.00	22.2	1.0055	1.0058	0.0133	5.5	14.8	0.0033	6.7
1440.00	22.2	1.0050	1.0053	0.0133	5.0	15.0	0.0014	6.1

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	2.5	6.2	26.9	35.6	56.8	7.6	64.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0106	0.0348	0.0388	0.0453	0.0518	0.0591	0.0687	0.1559	0.2000	0.2999	1.0161

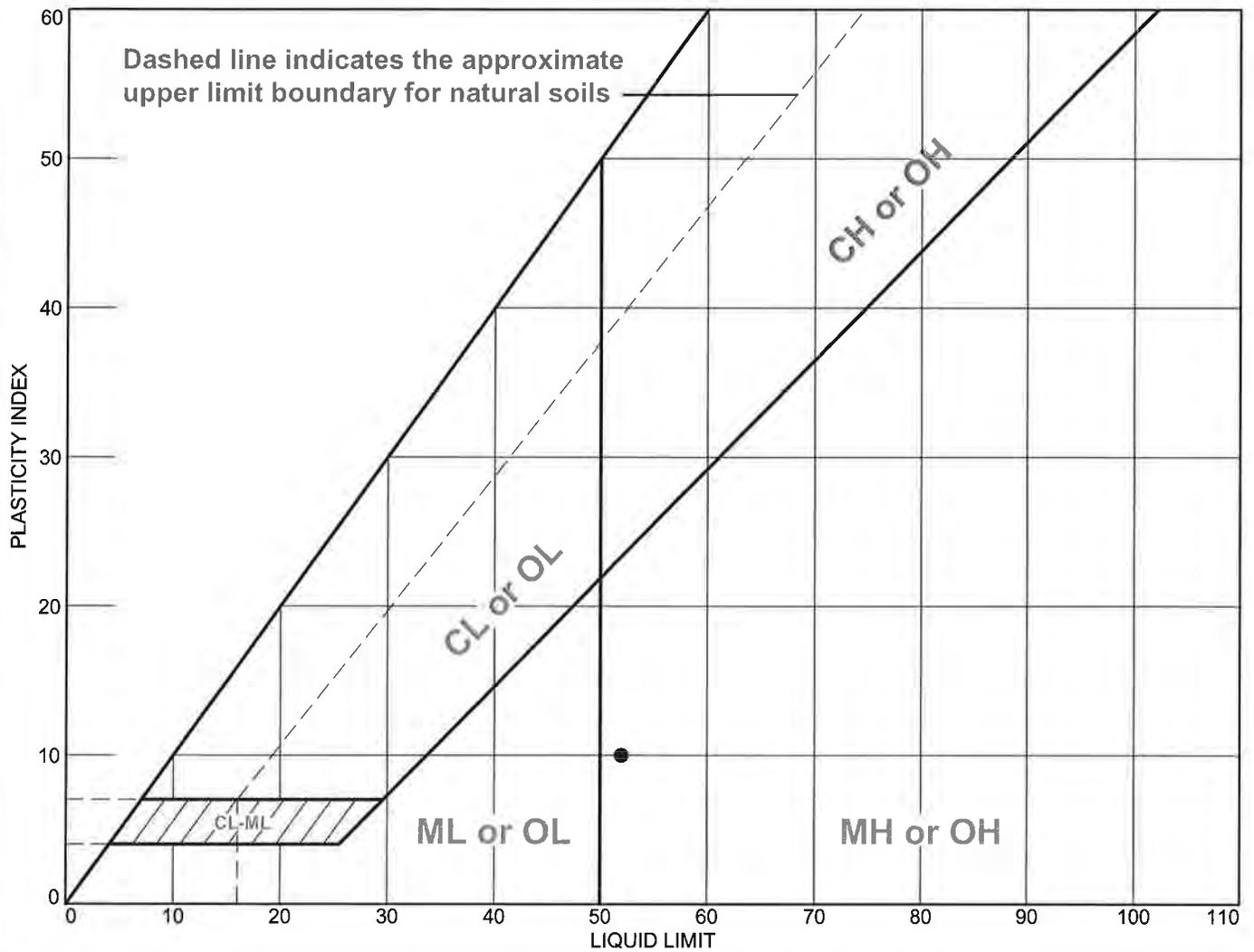
Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.44	6.49	2.83

Alpha Analytical

**ASTM D4318-10**

**Liquid Limit, Plastic Limit and Plasticity Index of Soils**

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	52	42	10	63	34	SM

<b>Project No.</b> <b>Project:</b>	<b>Client:</b>  <b>Source of Sample:</b> VC-IRB-01 <b>Sample Number:</b> L1736278-01	<b>Remarks:</b>
<b>Alpha Analytical</b>  <b>Mansfield, MA</b>		<b>Figure</b>



**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-01

Sample Number: L1736278-01

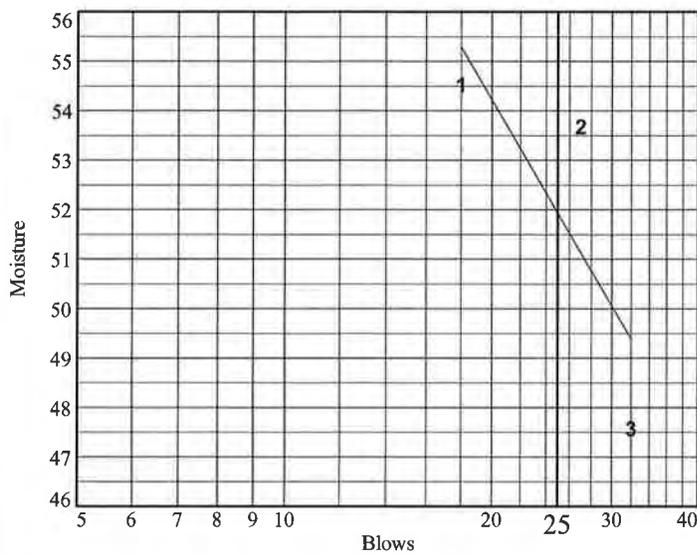
%<#40: 63

%<#200: 34

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	5.98	6.756	7.283			
Dry+Tare	4.33	4.85	5.35			
Tare	1.305	1.3	1.288			
# Blows	18	27	32			
Moisture	54.5	53.7	47.6			

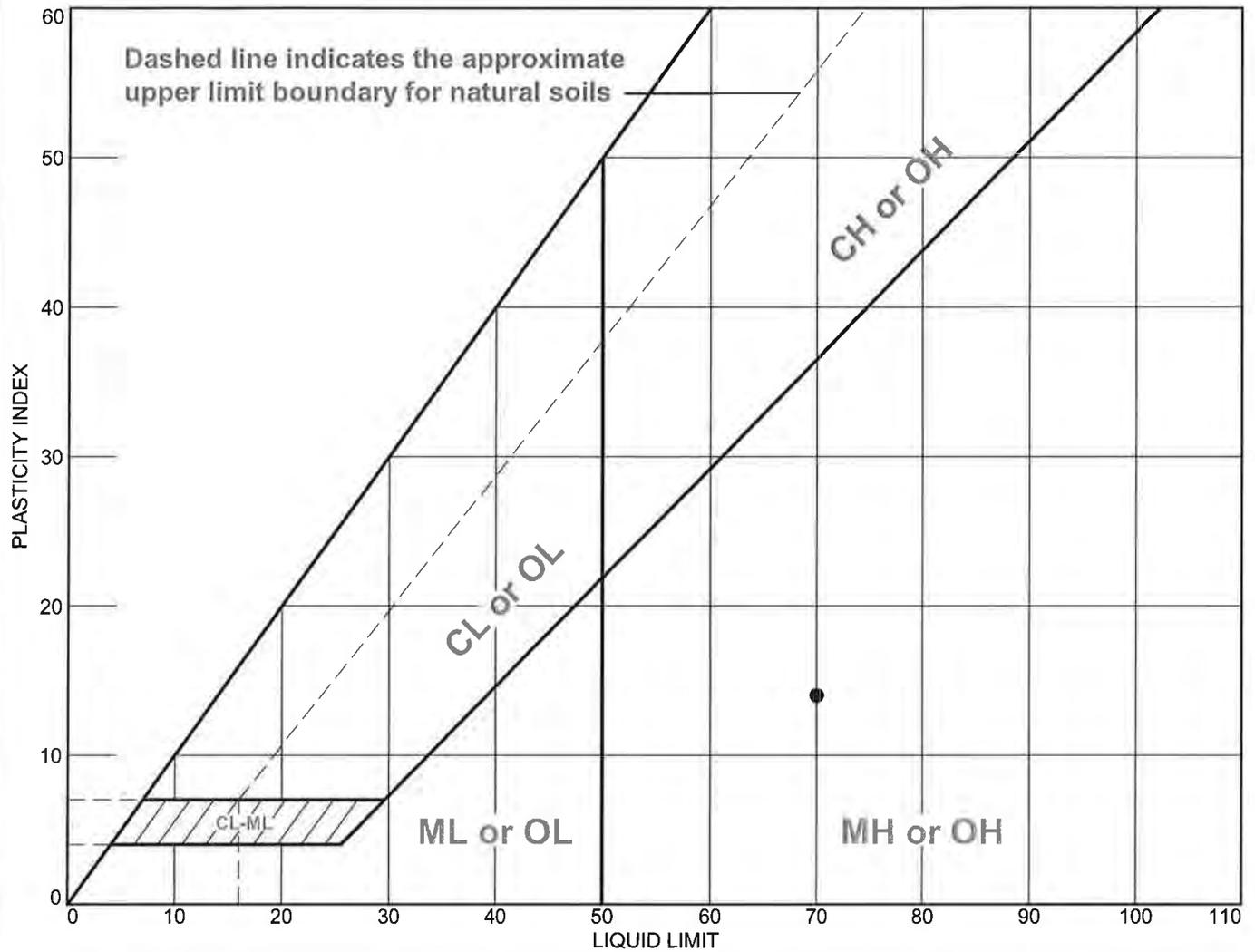


Liquid Limit= 52  
 Plastic Limit= 42  
 Plasticity Index= 10

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.097			
Dry+Tare	2.56			
Tare	1.287			
Moisture	42.2			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	70	56	14	52	42	SM

Project No.	Client:	Remarks:
Project:		
● Source of Sample: VC-IRB-02      Sample Number: L1736278-02		
Alpha Analytical		Figure
Mansfield, MA		

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-02

Sample Number: L1736278-02

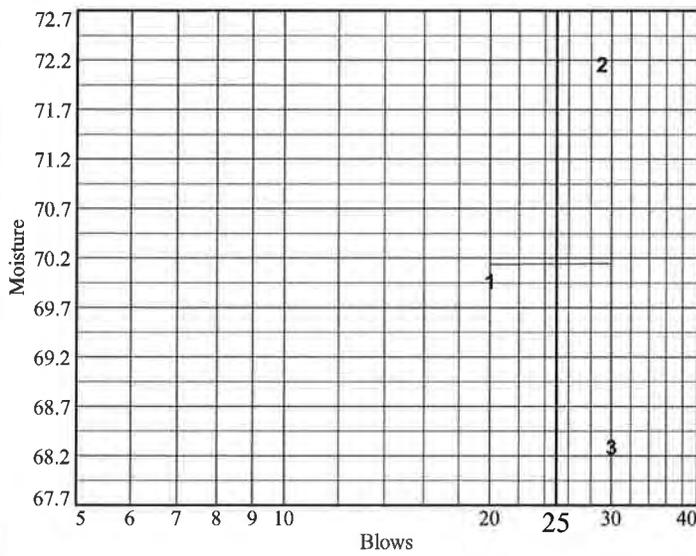
%<#40: 52

%<#200: 42

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	5.705	5.683	6.221			
Dry+Tare	3.89	3.84	4.22			
Tare	1.296	1.286	1.29			
# Blows	20	29	30			
Moisture	70.0	72.2	68.3			

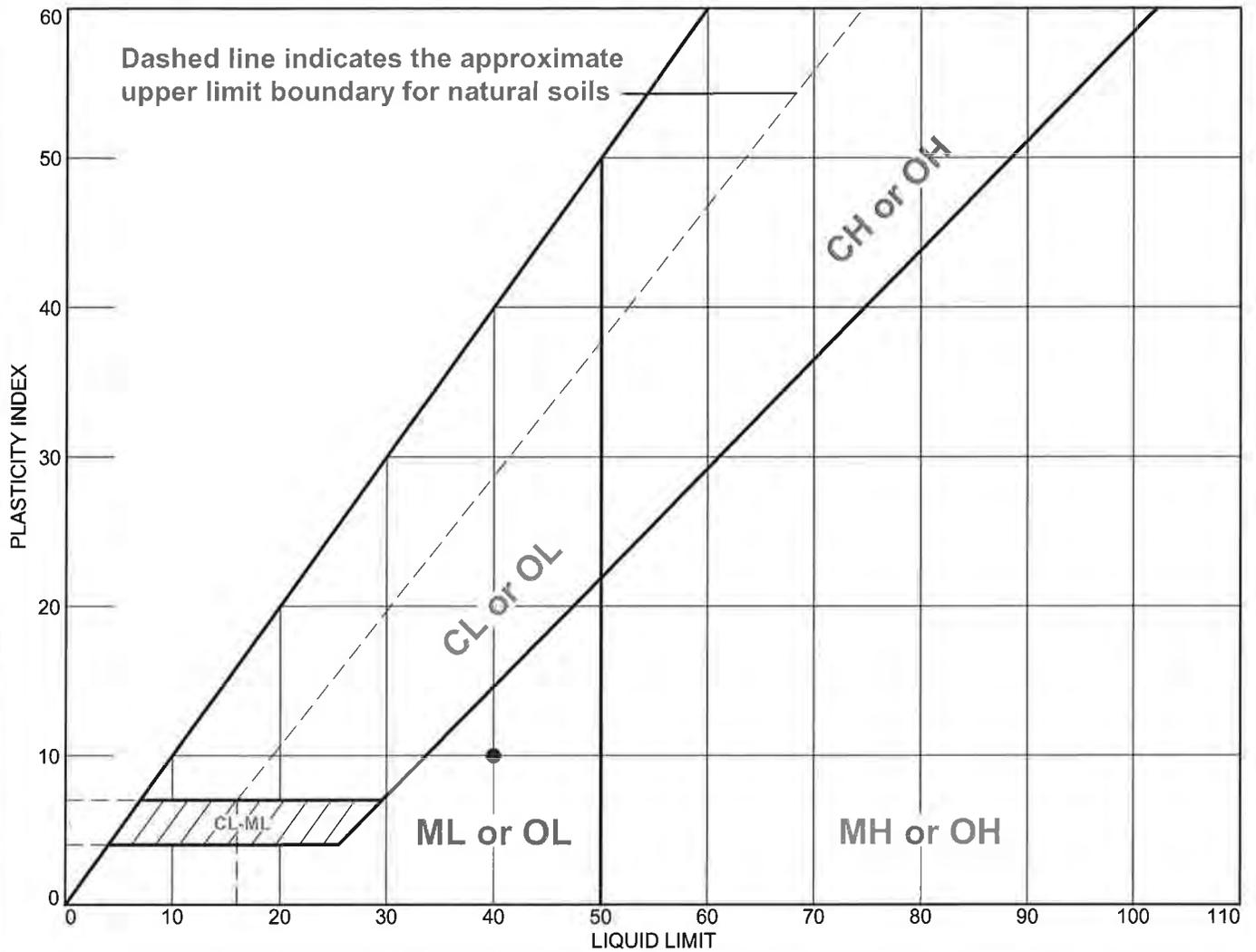


Liquid Limit= 70  
 Plastic Limit= 56  
 Plasticity Index= 14

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	2.967			
Dry+Tare	2.37			
Tare	1.298			
Moisture	55.7			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	40	30	10	77	32	SM

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p>● <b>Source of Sample:</b> VC-IRB-03-S1                      <b>Sample Number:</b> L1736278-03</p>	<p><b>Remarks:</b></p>
<p><b>Alpha Analytical</b></p> <p><b>Mansfield, MA</b></p>	<p><b>Figure</b></p>

### LIQUID AND PLASTIC LIMIT TEST DATA

11/17/2017

Location: VC-IRB-03-S1

Sample Number: L1736278-03

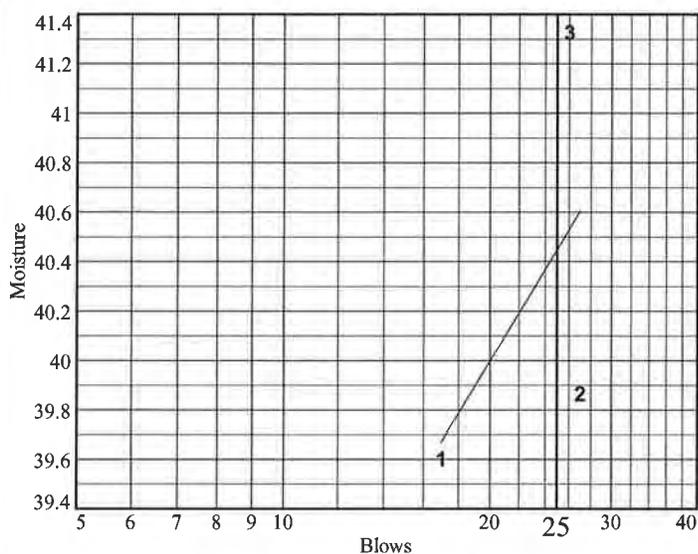
%<#40: 77

%<#200: 32

USCS: SM

#### Liquid Limit Data

Run No.	1	2	3	4	5	6
<b>Wet+Tare</b>	6.382	6.587	7.319			
<b>Dry+Tare</b>	4.94	5.08	5.56			
<b>Tare</b>	1.299	1.3	1.304			
<b># Blows</b>	17	27	26			
<b>Moisture</b>	39.6	39.9	41.3			

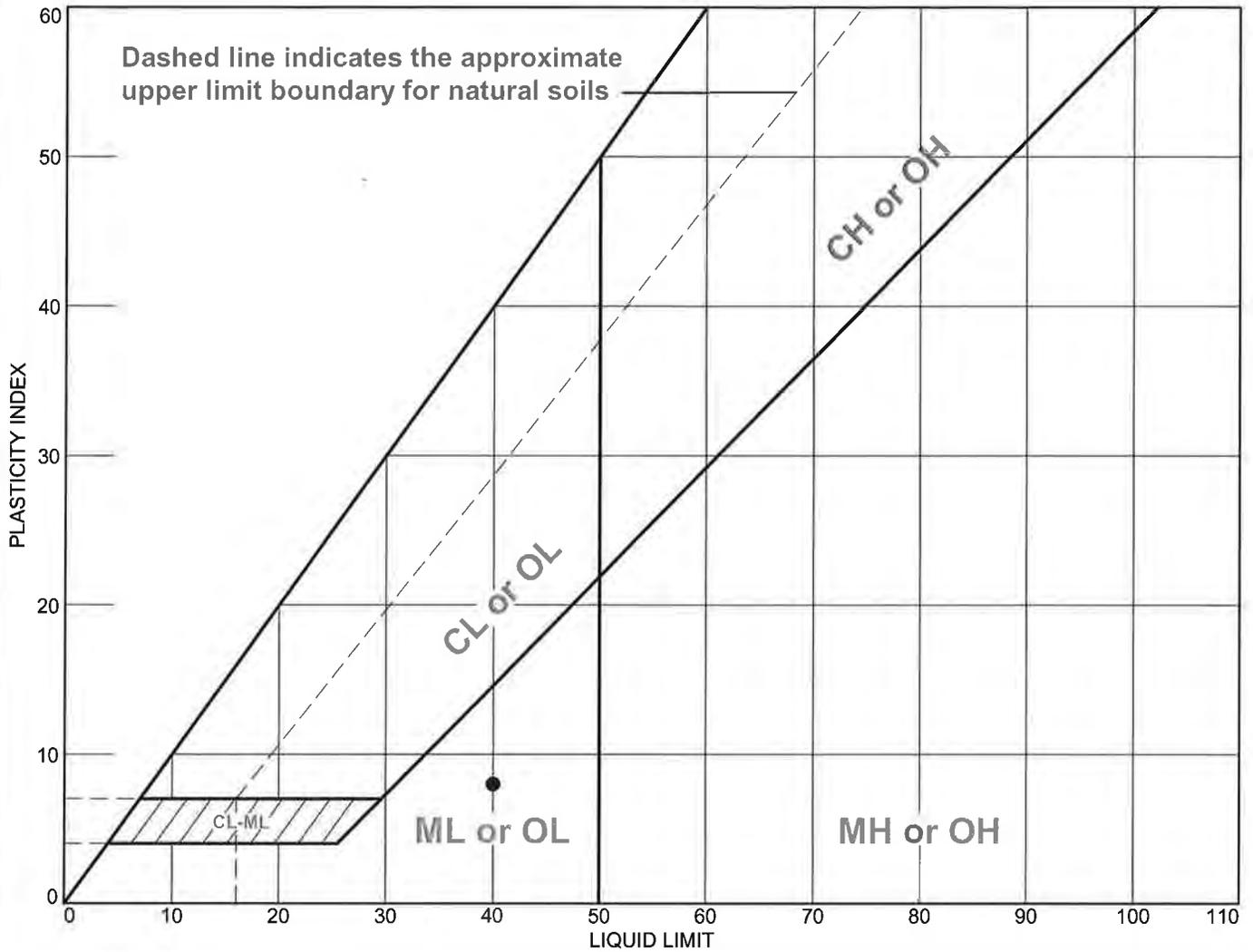


**Liquid Limit=** 40  
**Plastic Limit=** 30  
**Plasticity Index=** 10

#### Plastic Limit Data

Run No.	1	2	3	4
<b>Wet+Tare</b>	2.615			
<b>Dry+Tare</b>	2.31			
<b>Tare</b>	1.294			
<b>Moisture</b>	30.0			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	40	32	8	77	32	SM

**Project No.** \_\_\_\_\_ **Client:** \_\_\_\_\_

**Project:** \_\_\_\_\_

● **Source of Sample:** VC-IRB-03-S1      **Sample Number:** WG1064167-1

**Alpha Analytical**  
**Mansfield, MA**

**Remarks:**

**Figure**

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-03-S1

Sample Number: WG1064167-1

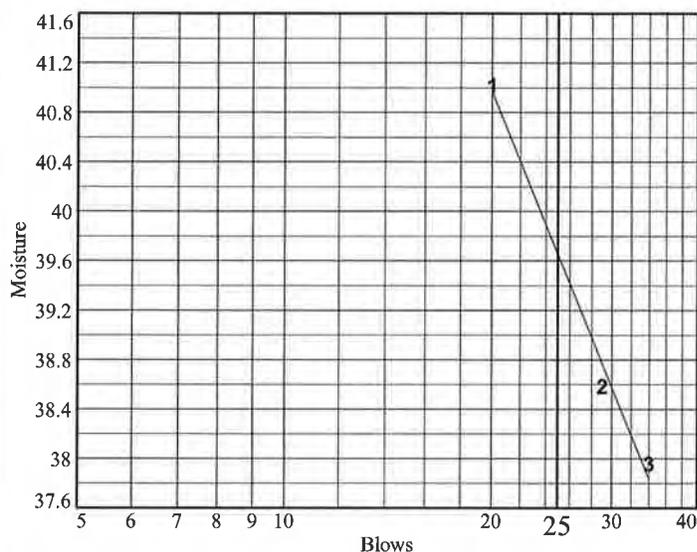
%<#40: 77

%<#200: 32

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.593	6.804	7.508			
Dry+Tare	5.05	5.27	5.8			
Tare	1.289	1.295	1.301			
# Blows	20	29	34			
Moisture	41.0	38.6	38.0			

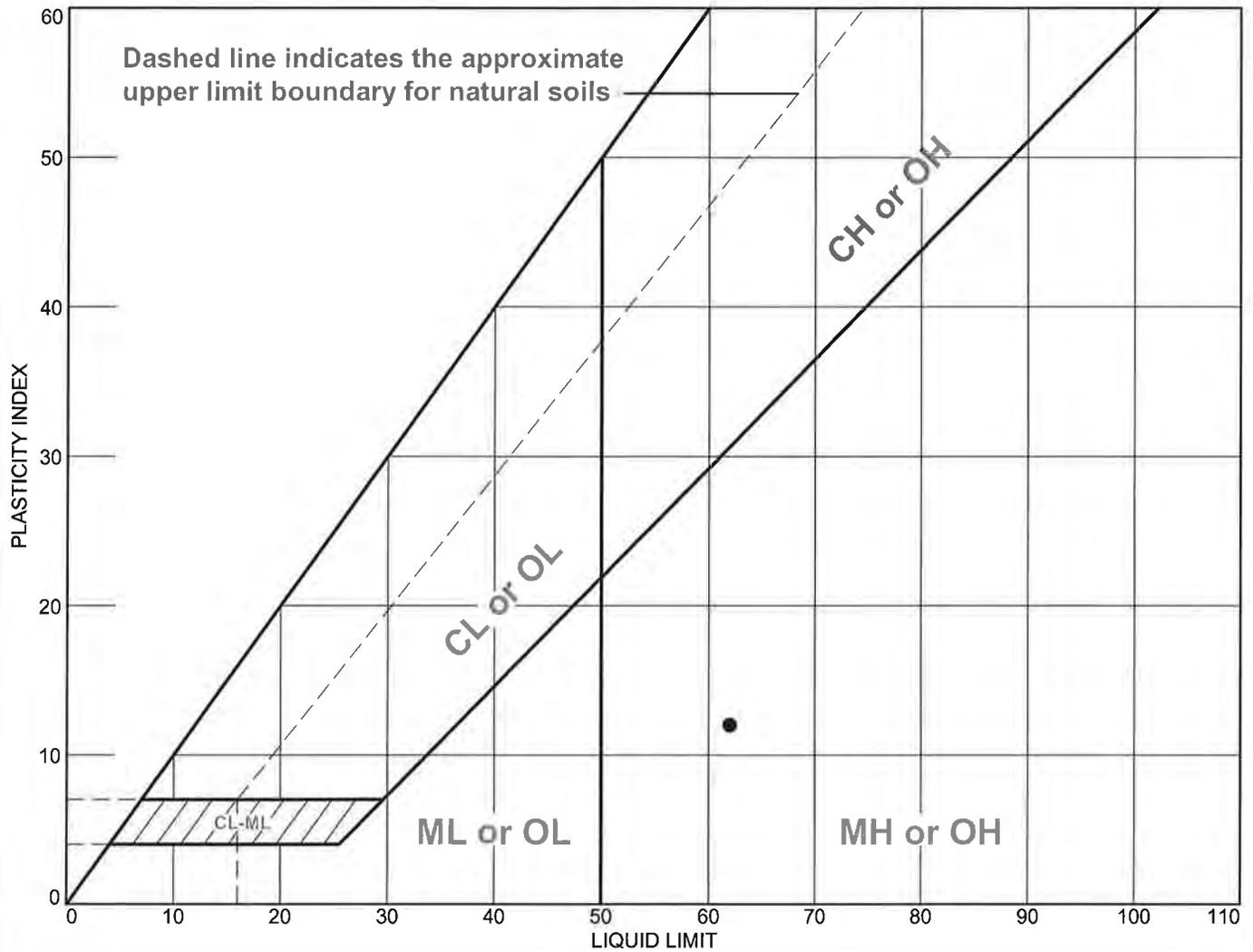


Liquid Limit= 40  
 Plastic Limit= 32  
 Plasticity Index= 8

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.162			
Dry+Tare	2.71			
Tare	1.285			
Moisture	31.7			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	62	50	12	75	52	OH

Project No.	Client:	Remarks:
Project:		
● Source of Sample: VC-IRB-03-S2      Sample Number: L1736278-04		
Alpha Analytical		Figure
Mansfield, MA		



**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-03-S2

Sample Number: L1736278-04

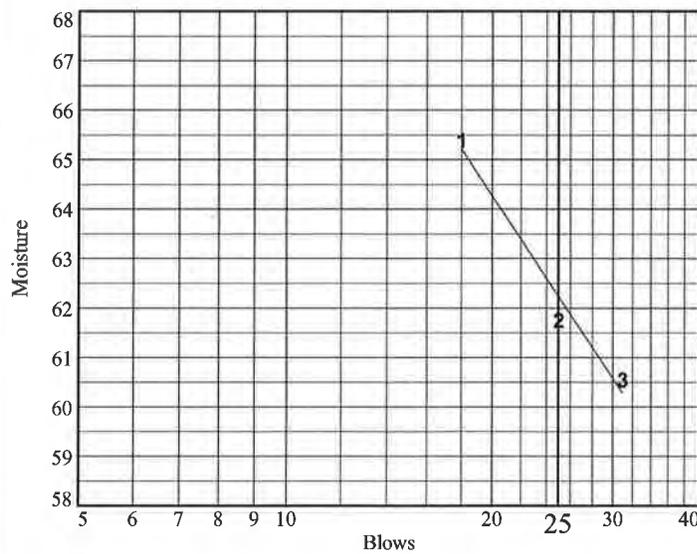
%<#40: 75

%<#200: 52

USCS: OH

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	5.404	6.624	7.429			
Dry+Tare	3.78	4.59	5.12			
Tare	1.297	1.297	1.307			
# Blows	18	25	31			
Moisture	65.4	61.8	60.6			

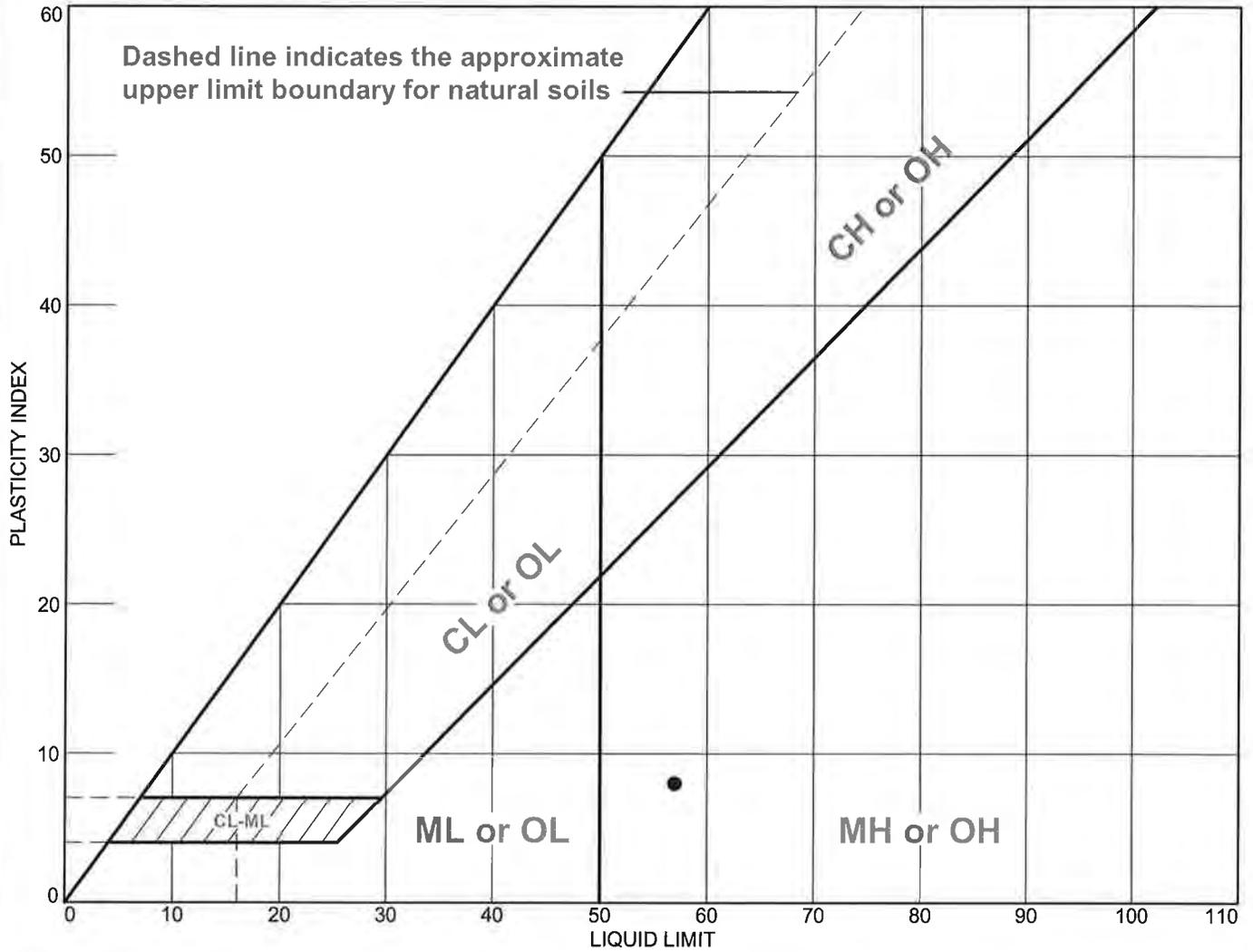


Liquid Limit= 62  
 Plastic Limit= 50  
 Plasticity Index= 12

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.082			
Dry+Tare	2.49			
Tare	1.31			
Moisture	50.2			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	57	49	8	87	74	OH

Project No.                      Client:

Project:

● Source of Sample: VC-IRB-03-S2                      Sample Number: L1736278-05

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**Alpha Analytical**

**Mansfield, MA**

Remarks:

Figure

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-03-S2

Sample Number: L1736278-05

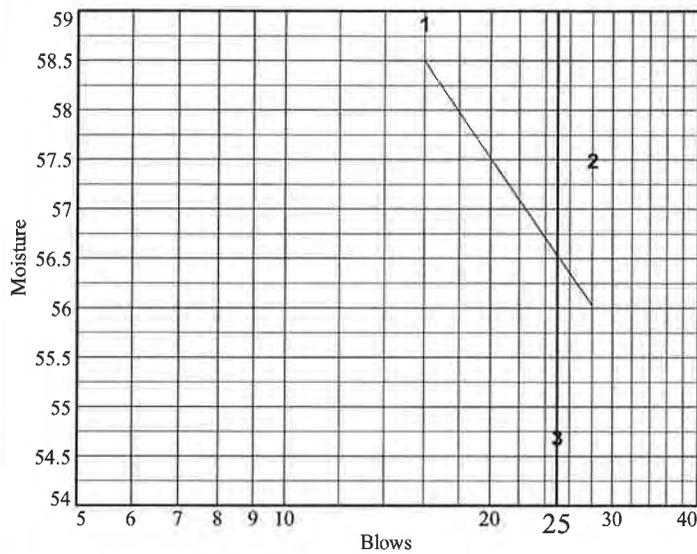
%<#40: 87

%<#200: 74

USCS: OH

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	5.845	6.814	6.323			
Dry+Tare	4.16	4.8	4.54			
Tare	1.298	1.297	1.28			
# Blows	16	28	25			
Moisture	58.9	57.5	54.7			

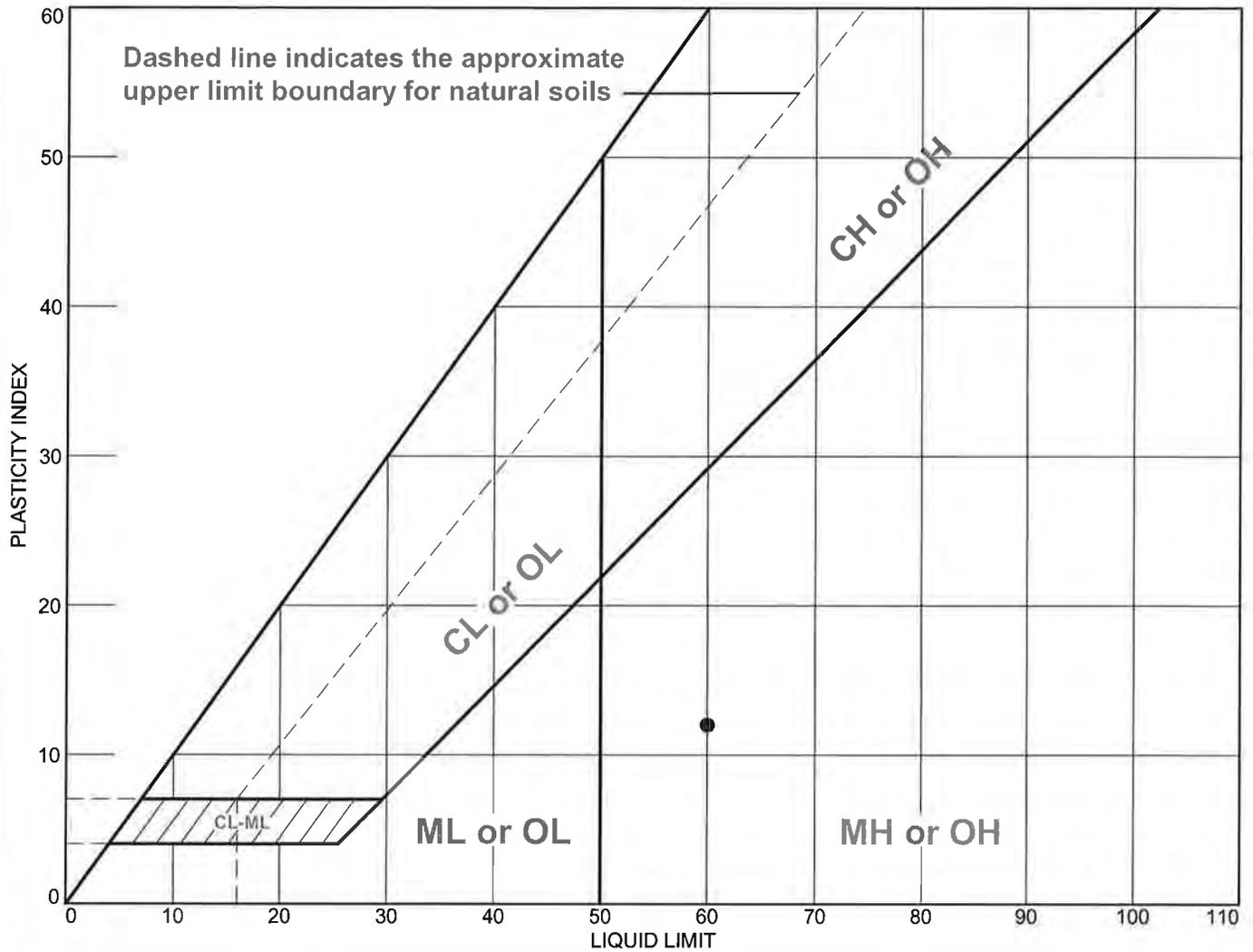


Liquid Limit= 57  
 Plastic Limit= 49  
 Plasticity Index= 8

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.056			
Dry+Tare	2.48			
Tare	1.305			
Moisture	49.0			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	60	48	12	82	67	OH

<b>Project No.</b> <b>Project:</b>	<b>Client:</b>  <b>Source of Sample:</b> VC-IRB-05-S1 <b>Sample Number:</b> L1736278-06	<b>Remarks:</b>
<b>Alpha Analytical</b>  <b>Mansfield, MA</b>		<b>Figure</b>

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-05-S1

Sample Number: L1736278-06

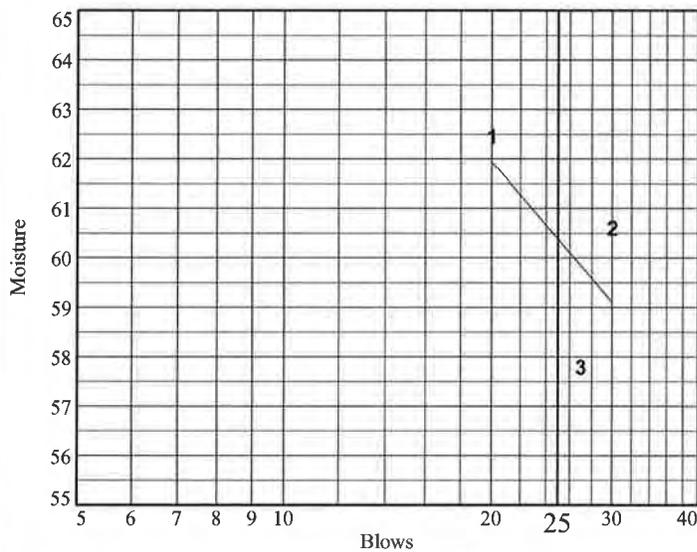
%<#40: 82

%<#200: 67

USCS: OH

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	5.971	6.861	6.59			
Dry+Tare	4.17	4.76	4.65			
Tare	1.287	1.294	1.294			
# Blows	20	30	27			
Moisture	62.5	60.6	57.8			

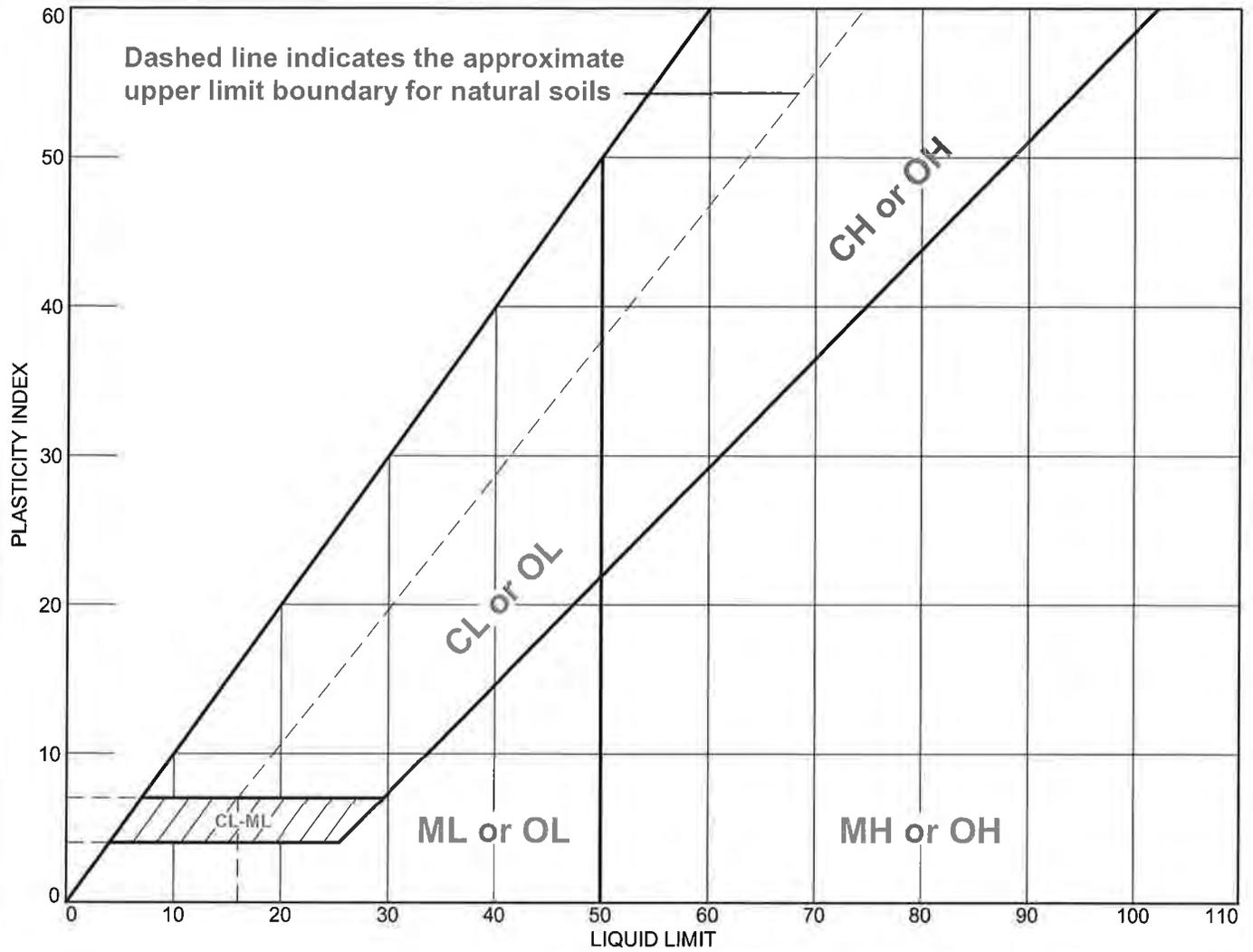


Liquid Limit= 60  
 Plastic Limit= 48  
 Plasticity Index= 12

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.038			
Dry+Tare	2.48			
Tare	1.312			
Moisture	47.8			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	90	93	NP	55	51	OH

Project No.	Client:	Remarks:
Project:		
● Source of Sample: VC-IRB-05-S2	Sample Number: L1736278-07	
<b>Alpha Analytical</b>		
<b>Mansfield, MA</b>		<b>Figure</b>

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-05-S2

Sample Number: L1736278-07

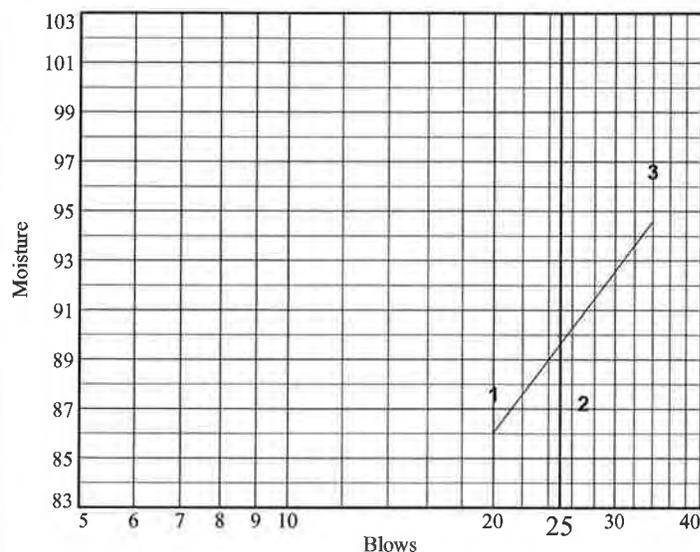
%<#40: 55

%<#200: 51

USCS: OH

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	4.03	4.468	6.672			
Dry+Tare	2.75	2.99	4.03			
Tare	1.289	1.296	1.296			
# Blows	20	27	34			
Moisture	87.6	87.2	96.6			

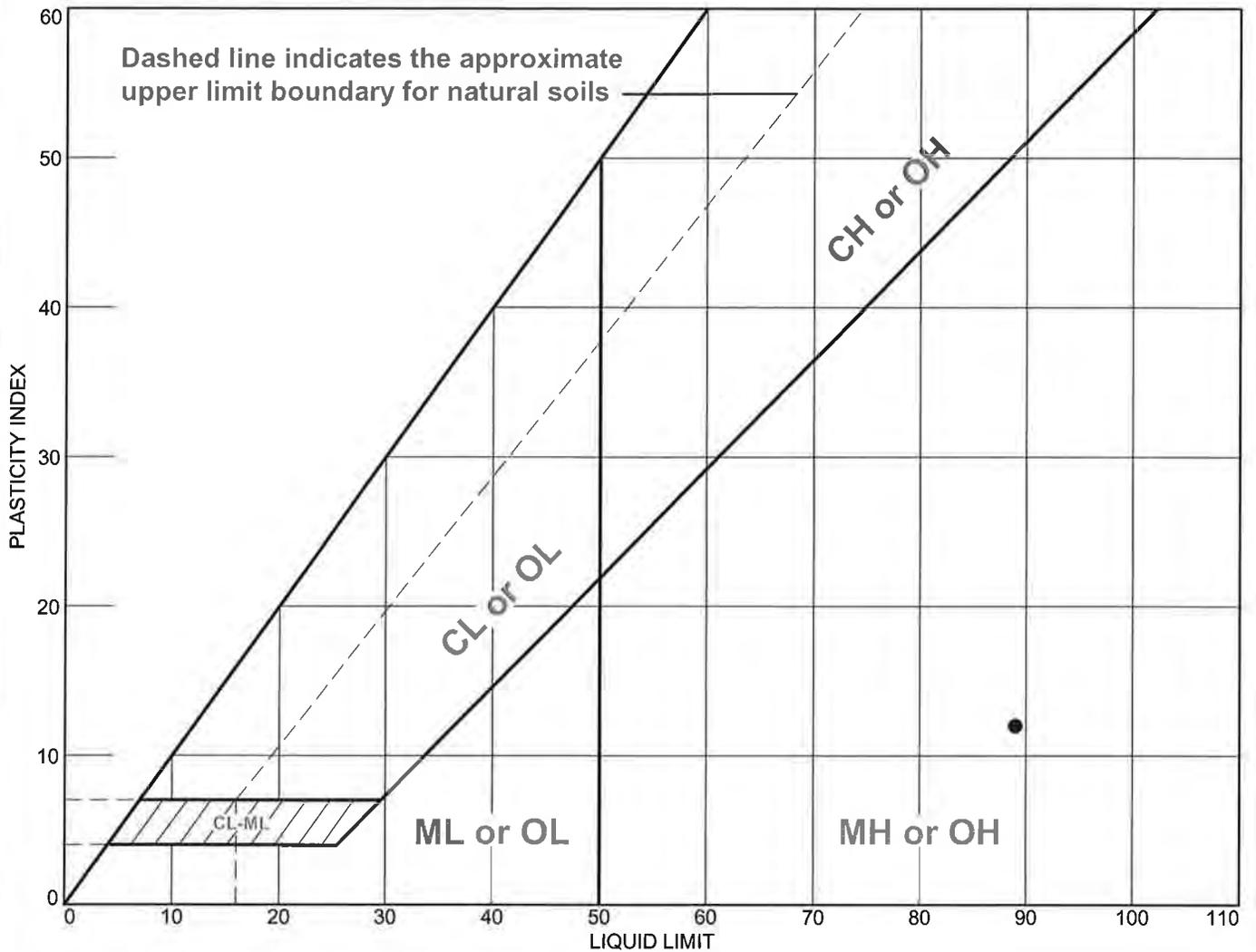


Liquid Limit= 90  
 Plastic Limit= 93  
 Plasticity Index= NP

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.058			
Dry+Tare	2.21			
Tare	1.299			
Moisture	93.1			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	89	77	12	79	66	OH

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p>● <b>Source of Sample:</b> VC-IRB-06              <b>Sample Number:</b> L1736278-08</p>	<p><b>Remarks:</b></p>
<p><b>Alpha Analytical</b></p> <p><b>Mansfield, MA</b></p>	

**Figure**



**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-06

Sample Number: L1736278-08

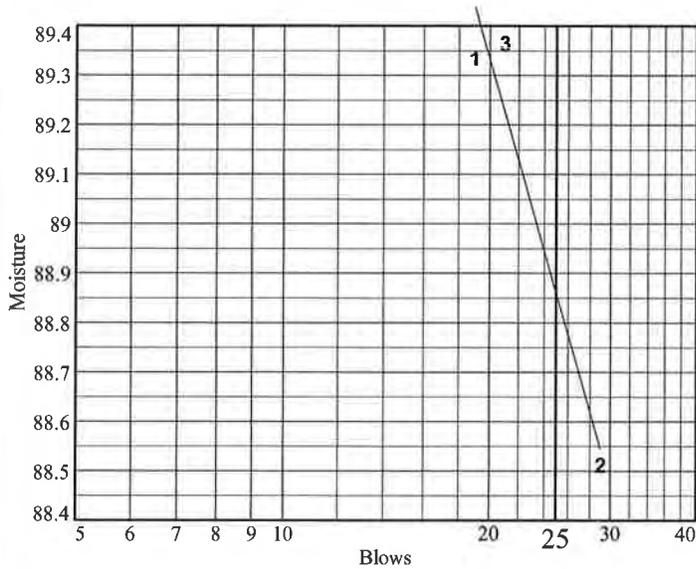
%<#40: 79

%<#200: 66

USCS: OH

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.1	6.766	7.357			
Dry+Tare	3.83	4.2	4.5			
Tare	1.289	1.301	1.303			
# Blows	19	29	21			
Moisture	89.3	88.5	89.4			

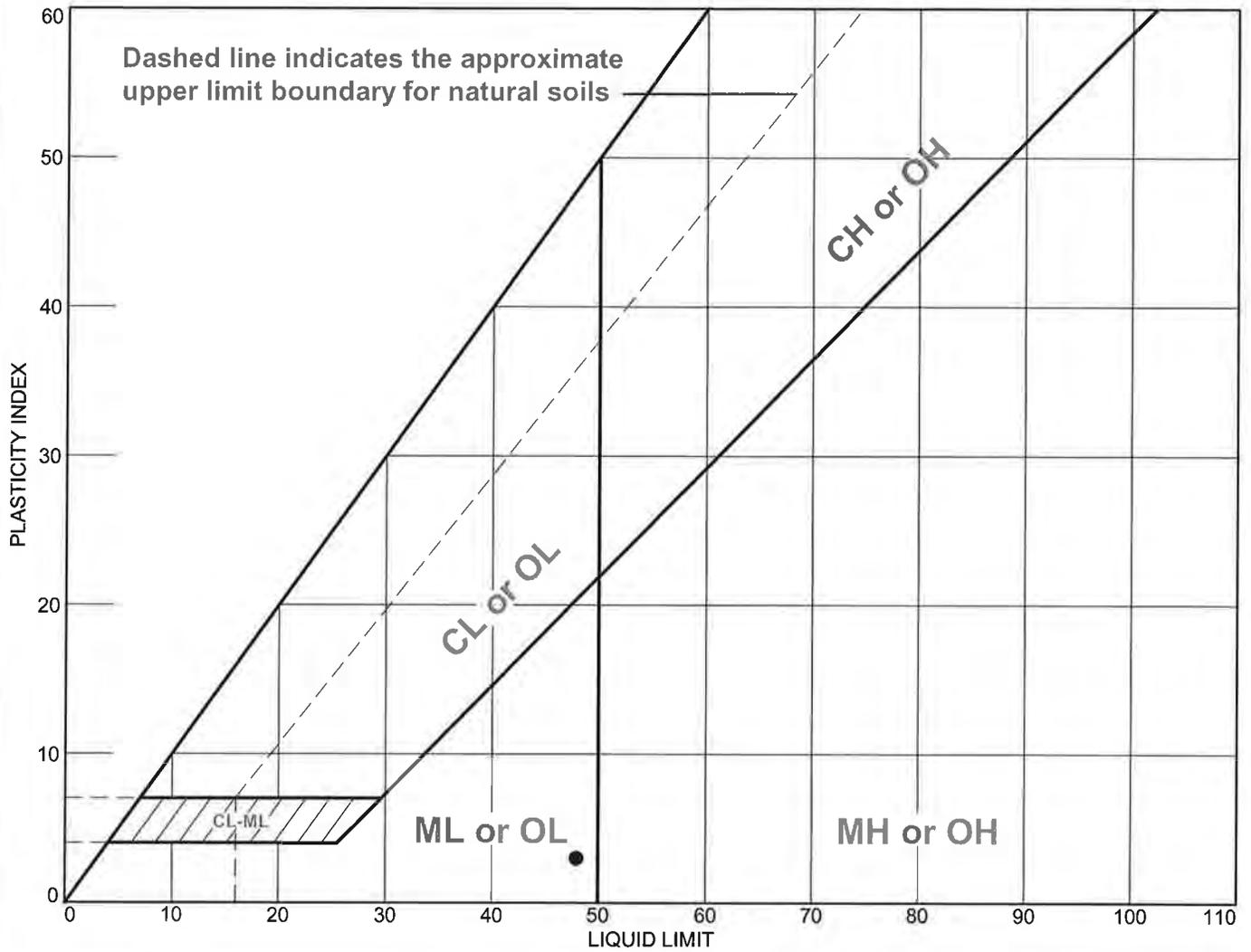


Liquid Limit= 89  
 Plastic Limit= 77  
 Plasticity Index= 12

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.224			
Dry+Tare	2.38			
Tare	1.286			
Moisture	77.1			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	48	45	3	59	31	SM

<b>Project No.</b>	<b>Client:</b>	<b>Remarks:</b>
<b>Project:</b>		
● <b>Source of Sample:</b> VC-IRB-07-ALT-S1 <b>Sample Number:</b> L1736278-09		
<b>Alpha Analytical</b>		
<b>Mansfield, MA</b>		<b>Figure</b>

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

**Location:** VC-IRB-07-ALT-S1

**Sample Number:** L1736278-09

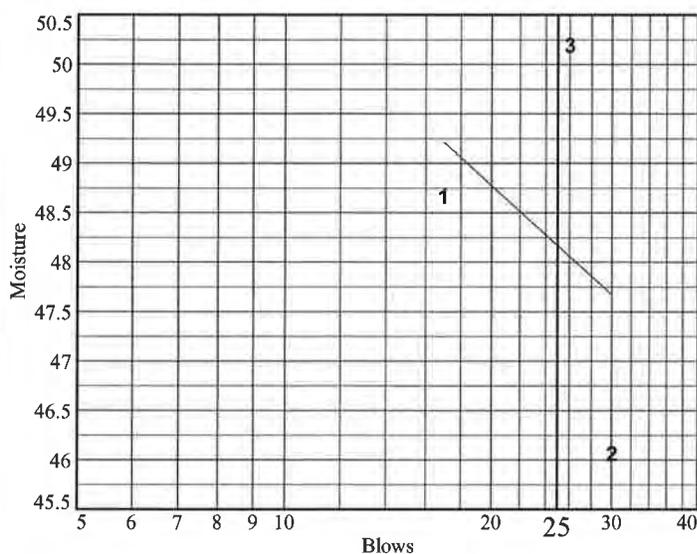
**%<#40:** 59

**%<#200:** 31

**USCS:** SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
<b>Wet+Tare</b>	6.296	6.853	7.685			
<b>Dry+Tare</b>	4.66	5.1	5.55			
<b>Tare</b>	1.299	1.295	1.297			
<b># Blows</b>	17	30	26			
<b>Moisture</b>	48.7	46.1	50.2			

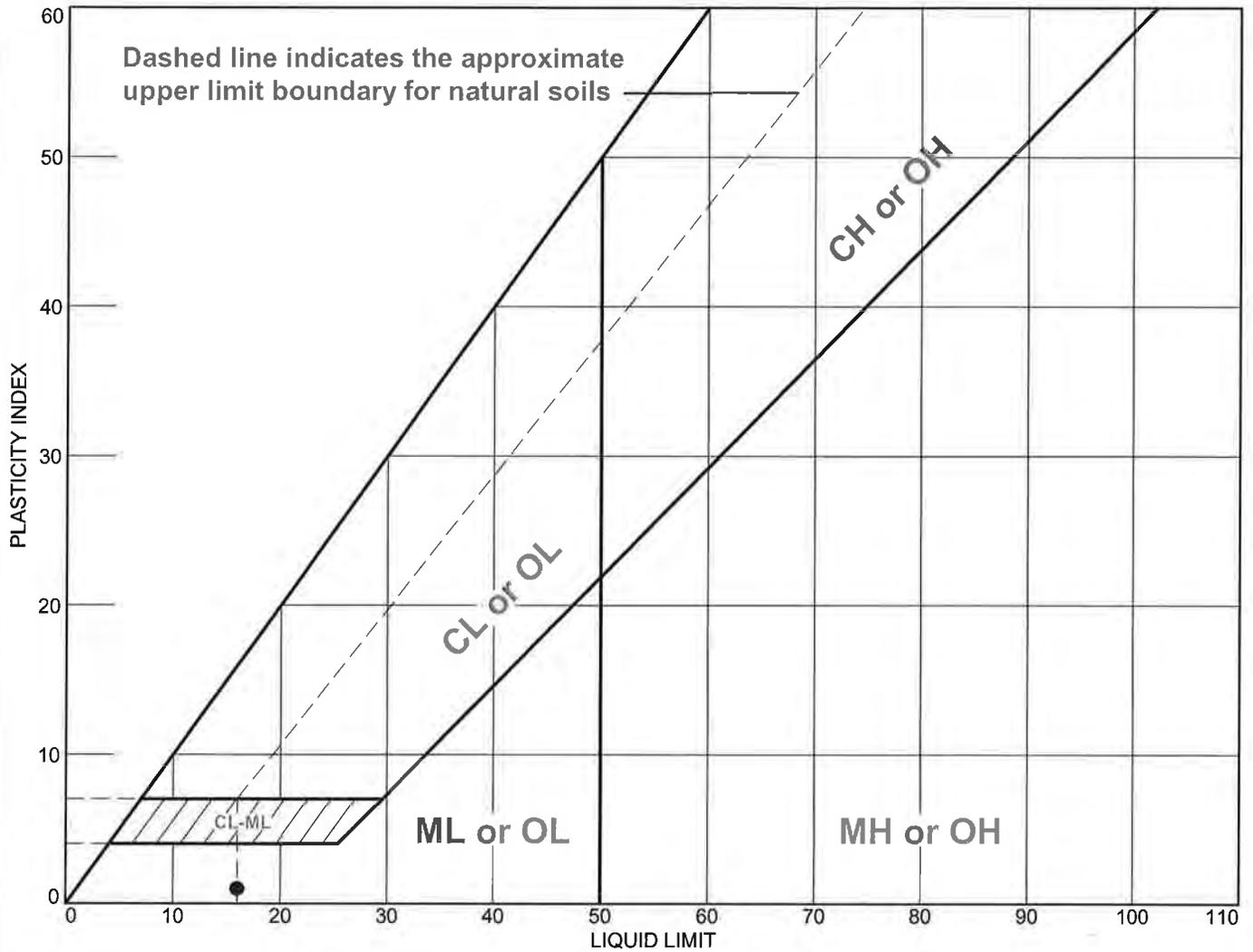


**Liquid Limit=** 48  
**Plastic Limit=** 45  
**Plasticity Index=** 3

**Plastic Limit Data**

Run No.	1	2	3	4
<b>Wet+Tare</b>	3.014			
<b>Dry+Tare</b>	2.48			
<b>Tare</b>	1.29			
<b>Moisture</b>	44.9			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	16	15	1	68	18	SM

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p>● <b>Source of Sample:</b> VC-IRB-07-ALT-S2      <b>Sample Number:</b> L1736278-10</p>	<p><b>Remarks:</b></p>
<p><b>Alpha Analytical</b></p> <p><b>Mansfield, MA</b></p>	<p><b>Figure</b></p>

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-07-ALT-S2

Sample Number: L1736278-10

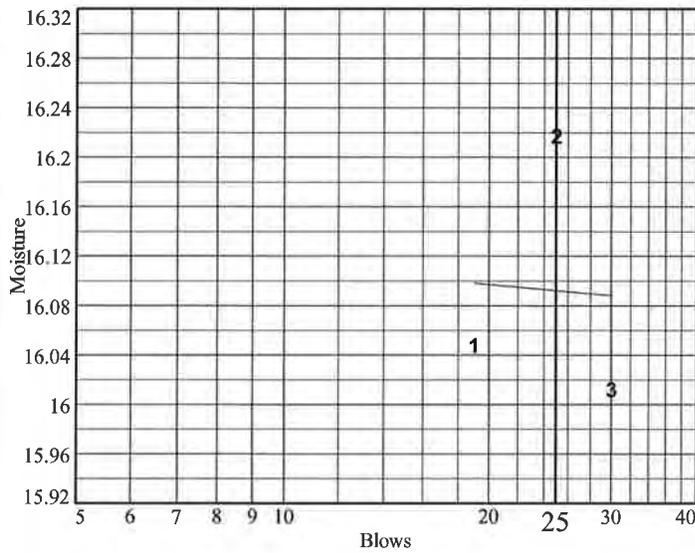
%<#40: 68

%<#200: 18

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	8.426	7.901	9.015			
Dry+Tare	7.44	6.98	7.95			
Tare	1.296	1.301	1.299			
# Blows	19	25	30			
Moisture	16.0	16.2	16.0			

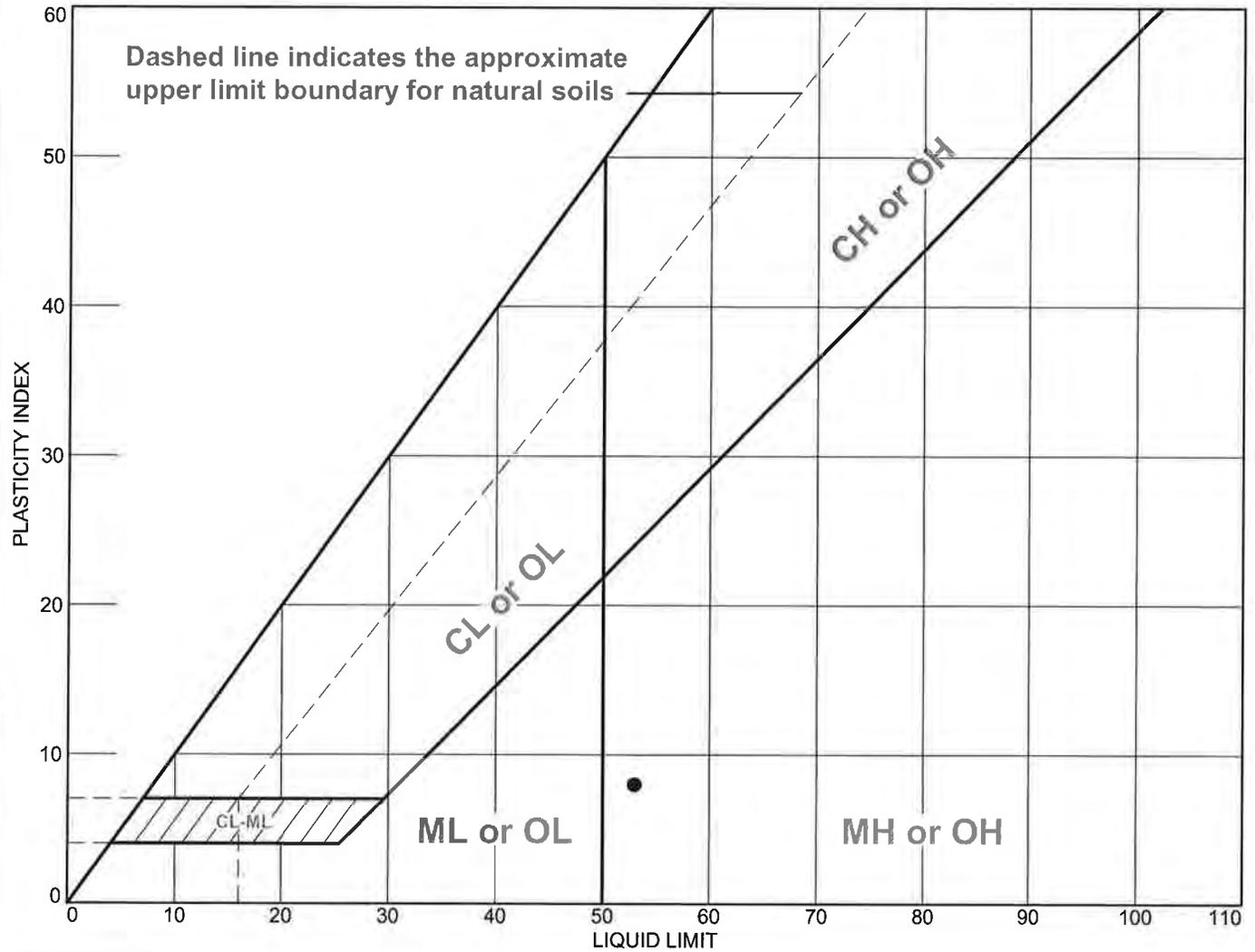


Liquid Limit= 16  
 Plastic Limit= 15  
 Plasticity Index= 1

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	4.952			
Dry+Tare	4.46			
Tare	1.285			
Moisture	15.5			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	53	45	8	86	70	OH

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p>● <b>Source of Sample:</b> VC-IRB-08-ALT-S1                      <b>Sample Number:</b> L1736278-11</p>	<p><b>Remarks:</b></p>
<p><b>Alpha Analytical</b></p> <p><b>Mansfield, MA</b></p>	<p><b>Figure</b></p>

## LIQUID AND PLASTIC LIMIT TEST DATA

11/17/2017

Location: VC-IRB-08-ALT-S1

Sample Number: L1736278-11

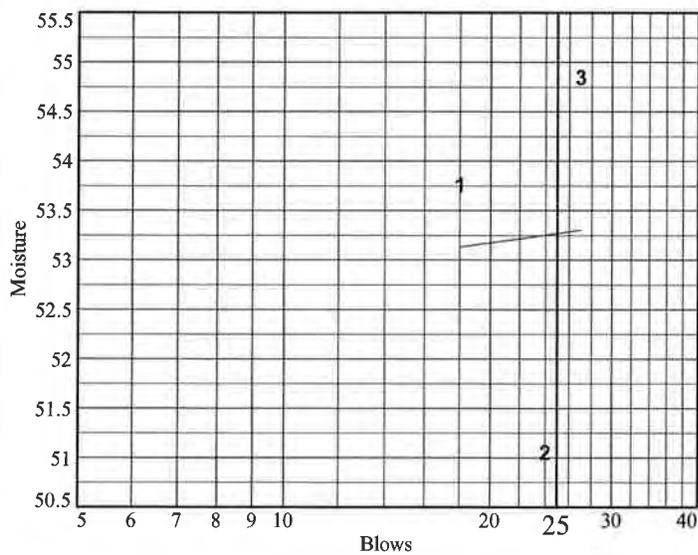
%&lt;#40: 86

%&lt;#200: 70

USCS: OH

## Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	6.946	7.23	7.247			
Dry+Tare	4.97	5.23	5.14			
Tare	1.295	1.313	1.299			
# Blows	18	24	27			
Moisture	53.8	51.1	54.9			

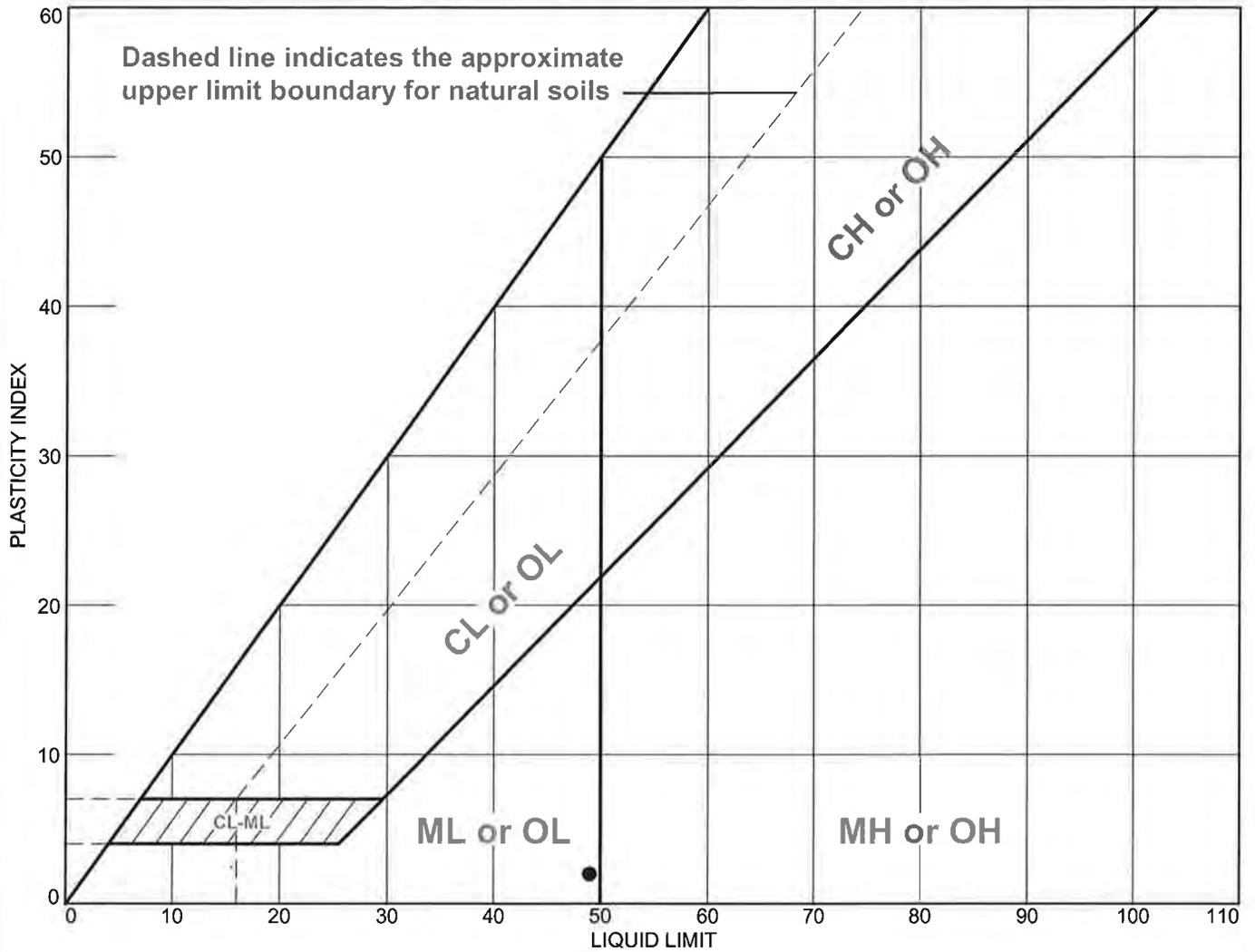


Liquid Limit= 53  
 Plastic Limit= 45  
 Plasticity Index= 8

## Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	3.598			
Dry+Tare	2.89			
Tare	1.306			
Moisture	44.7			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	49	47	2	86	70	OH

Project No.	Client:	Remarks:
Project:		
● Source of Sample: VC-IRB-08-ALT-S1      Sample Number: WG1064167-2		
<b>Alpha Analytical</b>		<b>Figure</b>
<b>Mansfield, MA</b>		



**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-08-ALT-S1

Sample Number: WG1064167-2

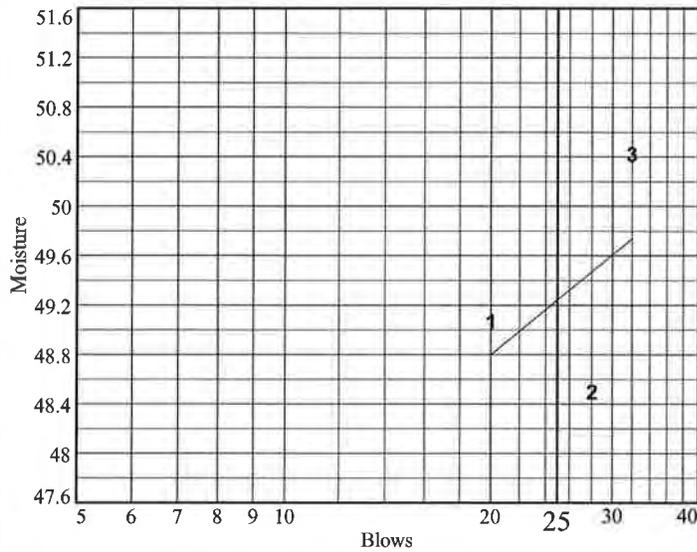
%<#40: 86

%<#200: 70

USCS: OH

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.356	6.649	6.943			
Dry+Tare	4.69	4.9	5.05			
Tare	1.295	1.294	1.296			
# Blows	20	28	32			
Moisture	49.1	48.5	50.4			

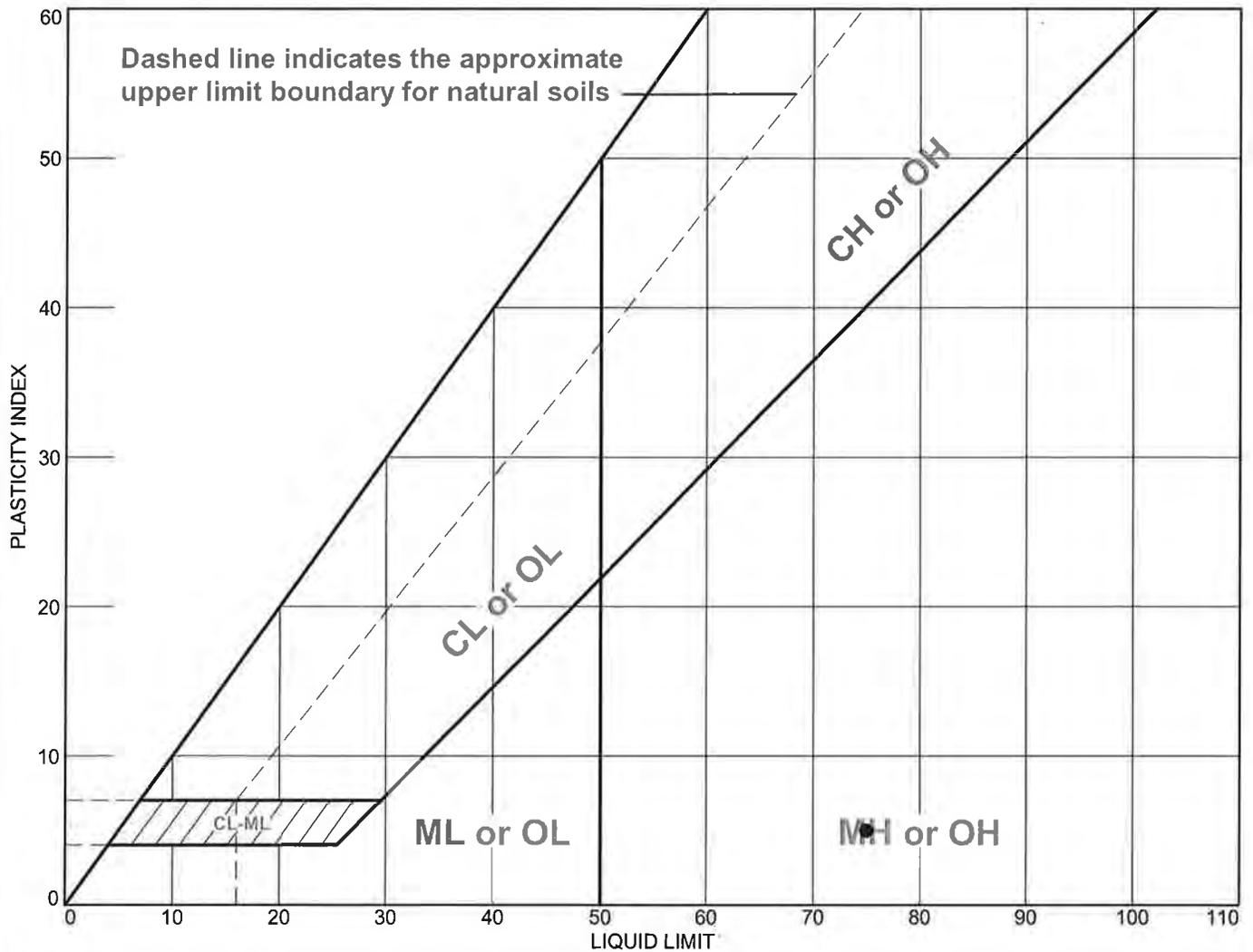


Liquid Limit= 49  
 Plastic Limit= 47  
 Plasticity Index= 2

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.094			
Dry+Tare	2.51			
Tare	1.277			
Moisture	47.4			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	75	70	5	52	50	OH

<b>Project No.</b> <b>Project:</b>	<b>Client:</b>  ● <b>Source of Sample:</b> VC-IRB-08-ALT-S2 <b>Sample Number:</b> L1736278-12	<b>Remarks:</b>
<b>Alpha Analytical</b>  <b>Mansfield, MA</b>		<b>Figure</b>

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

**Location:** VC-IRB-08-ALT-S2

**Sample Number:** L1736278-12

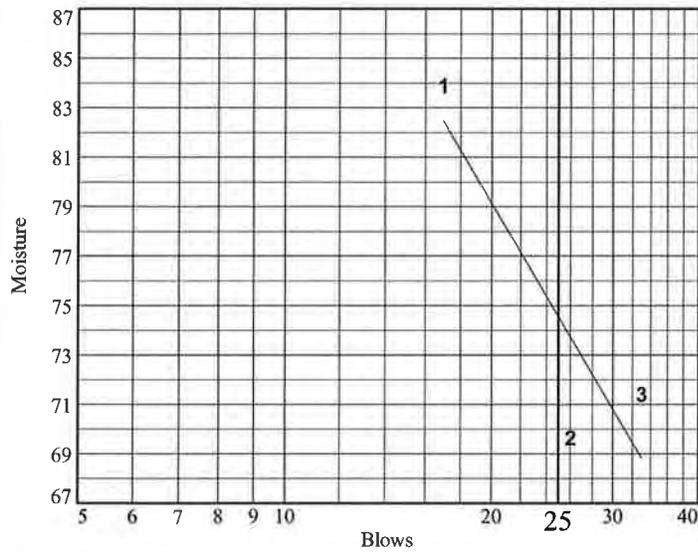
**%<#40:** 52

**%<#200:** 50

**USCS:** OH

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
<b>Wet+Tare</b>	6.386	8.347	10.354			
<b>Dry+Tare</b>	4.35	5.45	6.58			
<b>Tare</b>	1.924	1.292	1.297			
<b># Blows</b>	17	26	33			
<b>Moisture</b>	83.9	69.7	71.4			

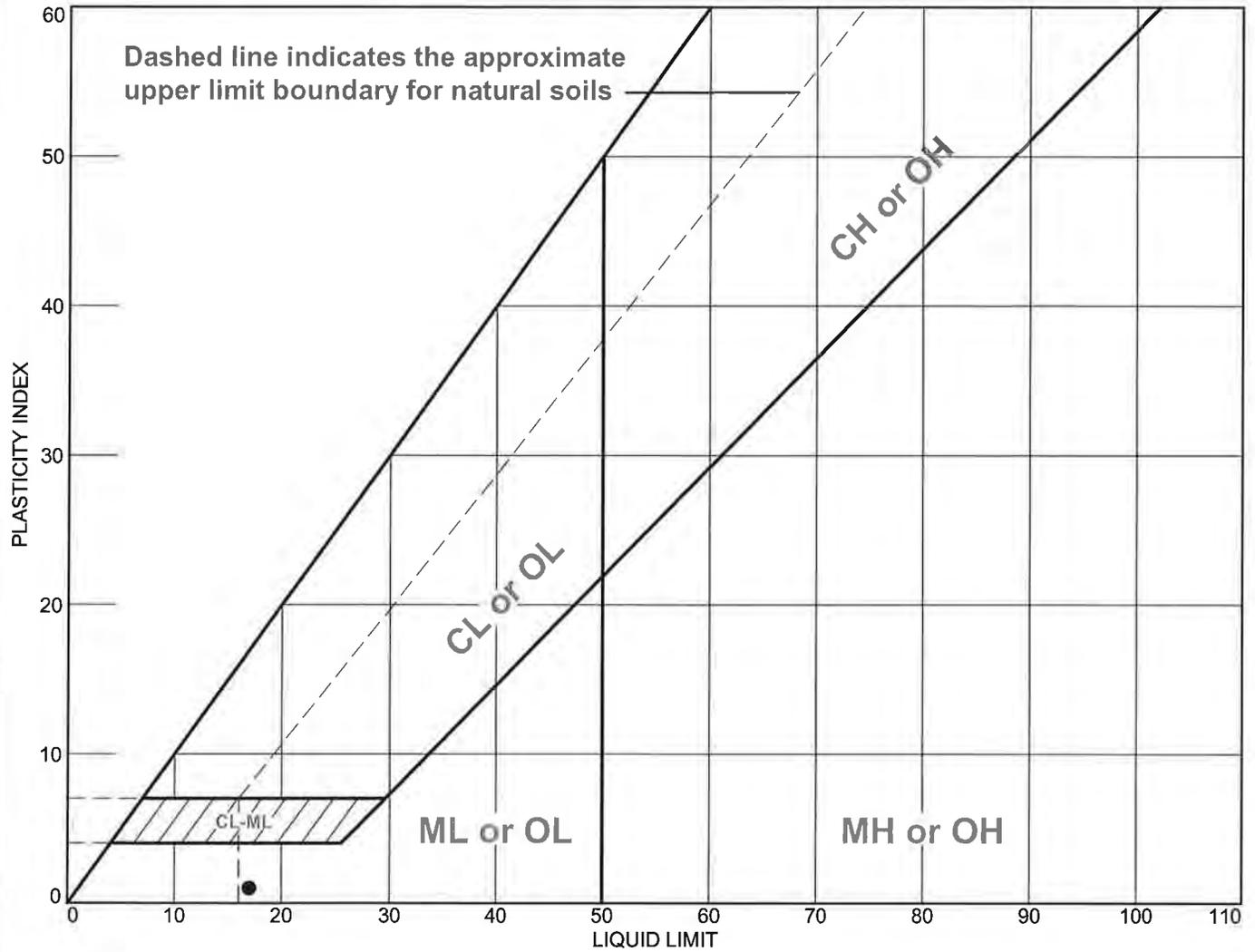


**Liquid Limit=** 75  
**Plastic Limit=** 70  
**Plasticity Index=** 5

**Plastic Limit Data**

Run No.	1	2	3	4
<b>Wet+Tare</b>	3.444			
<b>Dry+Tare</b>	2.56			
<b>Tare</b>	1.298			
<b>Moisture</b>	70.0			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	17	16	1	71	17	SM

<b>Project No.</b> <b>Project:</b>	<b>Client:</b>  <b>Source of Sample:</b> VC-IRB-08-ALT-S3 <b>Sample Number:</b> L1736278-13	<b>Remarks:</b>
<b>Alpha Analytical</b>  <b>Mansfield, MA</b>		<b>Figure</b>

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-08-ALT-S3

Sample Number: L1736278-13

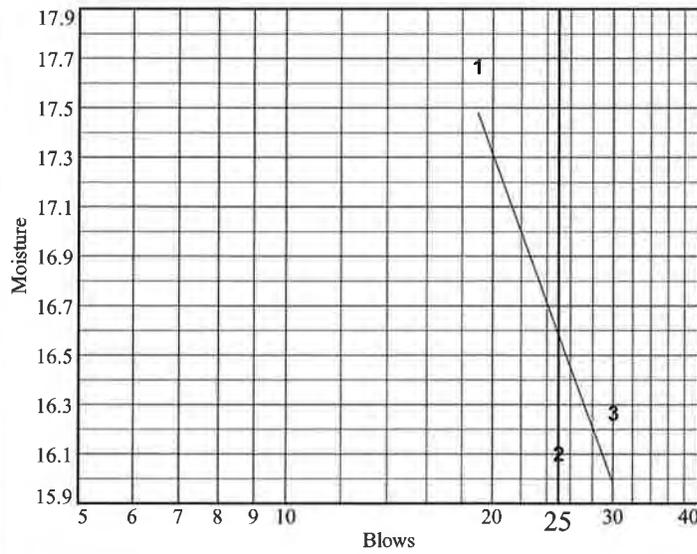
%<#40: 71

%<#200: 17

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.807	8.71	10.148			
Dry+Tare	5.98	7.68	8.91			
Tare	1.3	1.284	1.3			
# Blows	19	25	30			
Moisture	17.7	16.1	16.3			

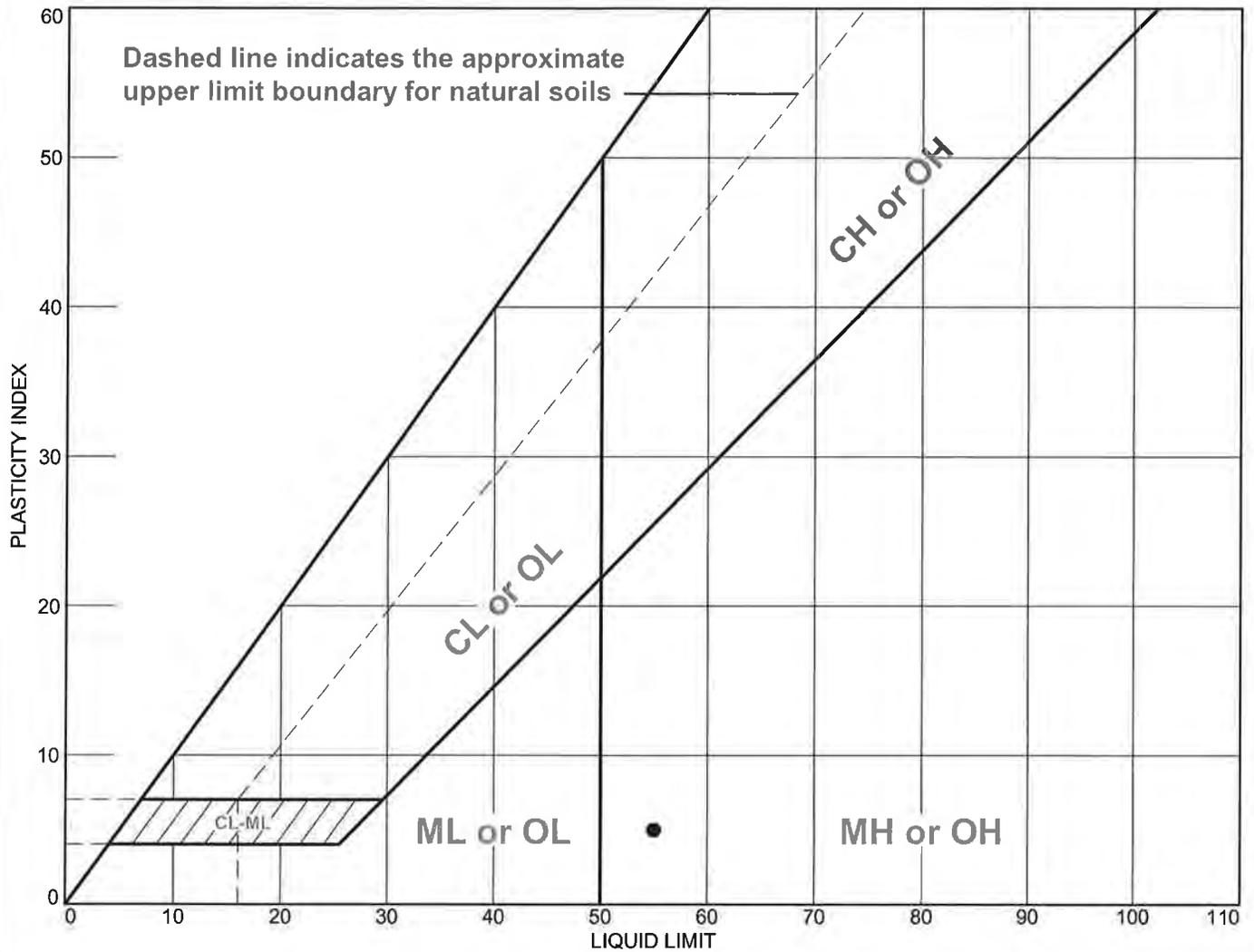


Liquid Limit= 17  
 Plastic Limit= 16  
 Plasticity Index= 1

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	4.569			
Dry+Tare	4.12			
Tare	1.293			
Moisture	15.9			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	55	50	5	85	65	OH

<b>Project No.</b> <b>Project:</b> ● <b>Source of Sample:</b> VC-IRB-09-ALT <b>Sample Number:</b> L1736278-14	<b>Client:</b>  <b>Remarks:</b>  
<b>Alpha Analytical</b> <b>Mansfield, MA</b>	

Figure

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-09-ALT

Sample Number: L1736278-14

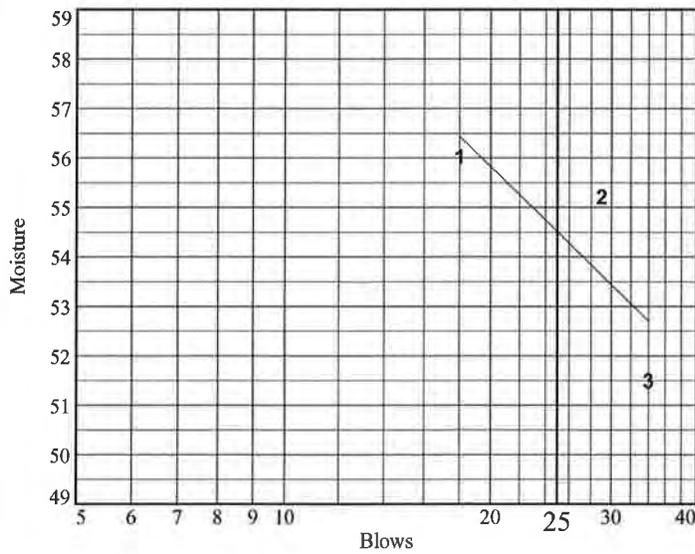
%<#40: 85

%<#200: 65

USCS: OH

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.314	7.319	7.619			
Dry+Tare	4.51	5.18	5.47			
Tare	1.291	1.307	1.298			
# Blows	18	29	34			
Moisture	56.0	55.2	51.5			

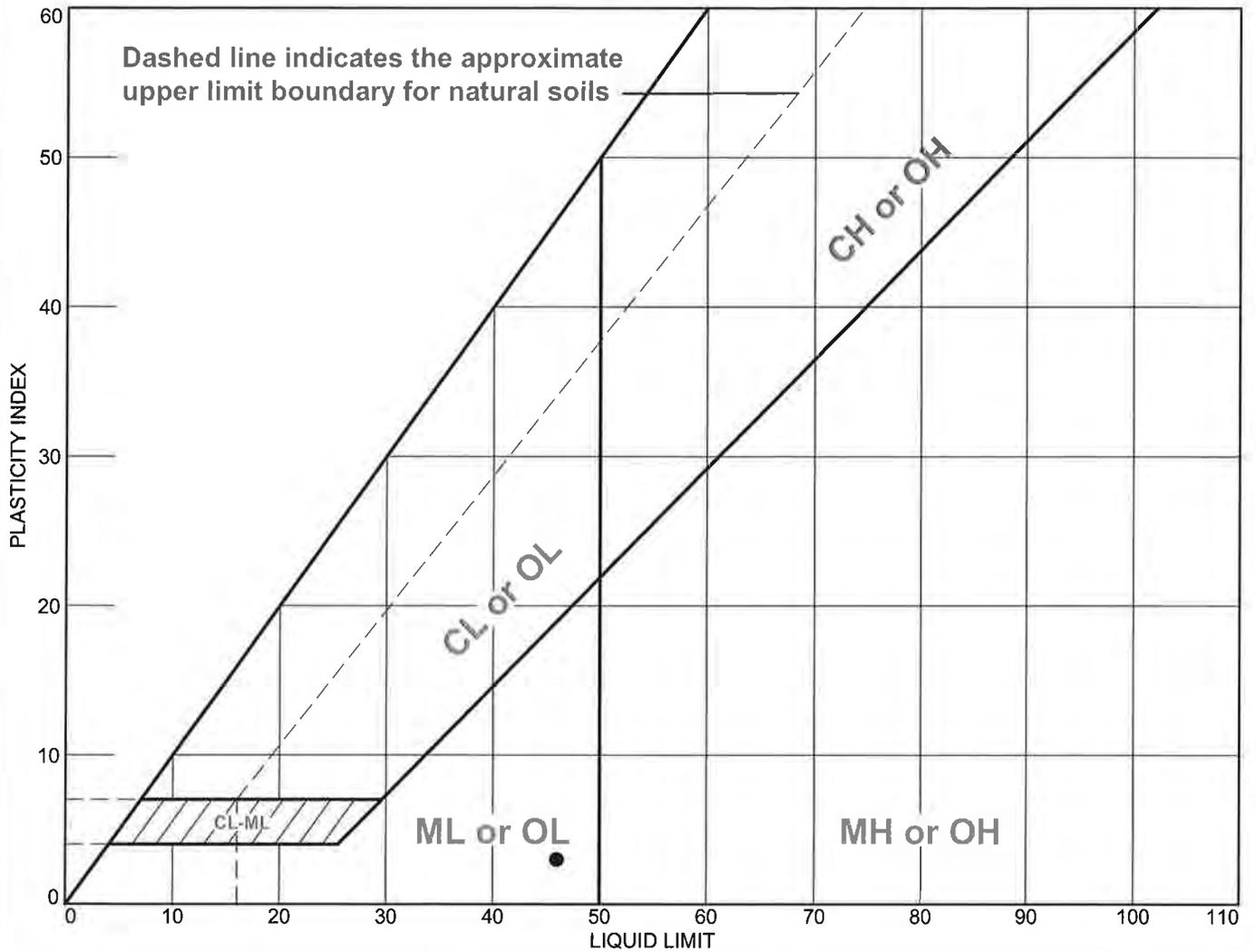


Liquid Limit= 55  
 Plastic Limit= 50  
 Plasticity Index= 5

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.954			
Dry+Tare	3.07			
Tare	1.285			
Moisture	49.5			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	46	43	3	86	58	OH

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p>● <b>Source of Sample:</b> VC-IRB-10              <b>Sample Number:</b> L1736278-15</p>	<p><b>Remarks:</b></p>
<p><b>Alpha Analytical</b></p> <p><b>Mansfield, MA</b></p>	<p><b>Figure</b></p>



**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-10

Sample Number: L1736278-15

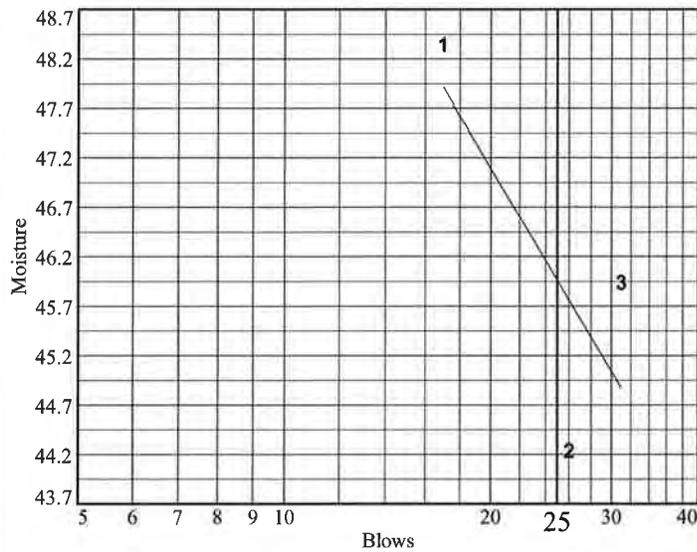
%<#40: 86

%<#200: 58

USCS: OH

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	5.896	7.259	7.417			
Dry+Tare	4.4	5.43	5.49			
Tare	1.306	1.296	1.296			
# Blows	17	26	31			
Moisture	48.4	44.2	45.9			

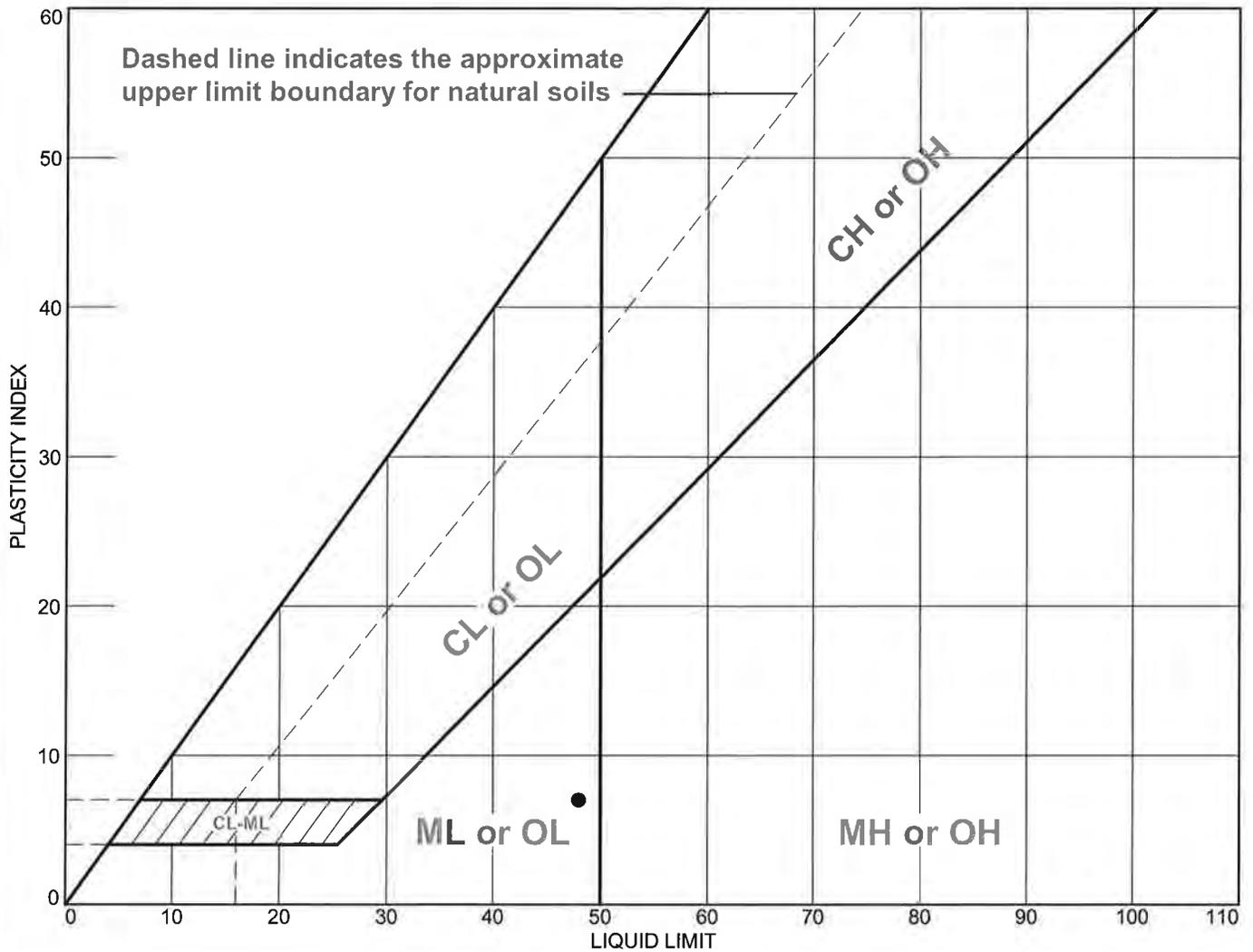


Liquid Limit= 46  
 Plastic Limit= 43  
 Plasticity Index= 3

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.45			
Dry+Tare	2.8			
Tare	1.281			
Moisture	42.8			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	48	41	7	88	22	SM

**Project No.** \_\_\_\_\_ **Client:** \_\_\_\_\_

**Project:** \_\_\_\_\_

● **Source of Sample:** VC-IRB-12-S1      **Sample Number:** L1736278-16

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**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-12-S1

Sample Number: L1736278-16

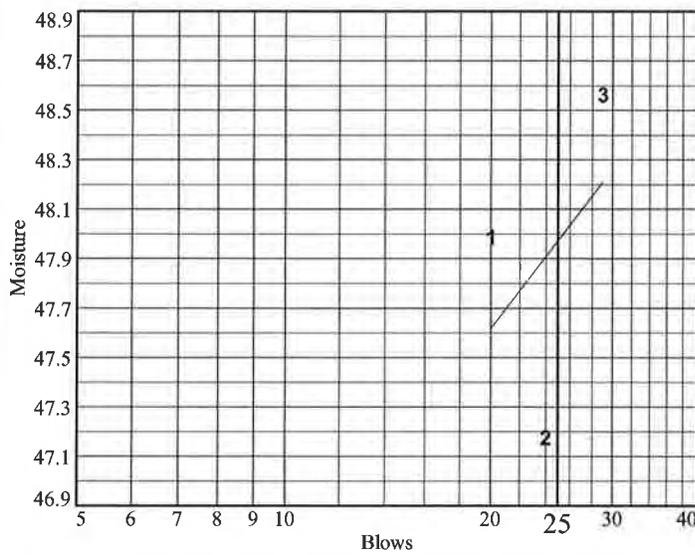
%<#40: 88

%<#200: 22

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.166	6.644	7.211			
Dry+Tare	4.59	4.93	5.28			
Tare	1.306	1.297	1.304			
# Blows	20	24	29			
Moisture	48.0	47.2	48.6			

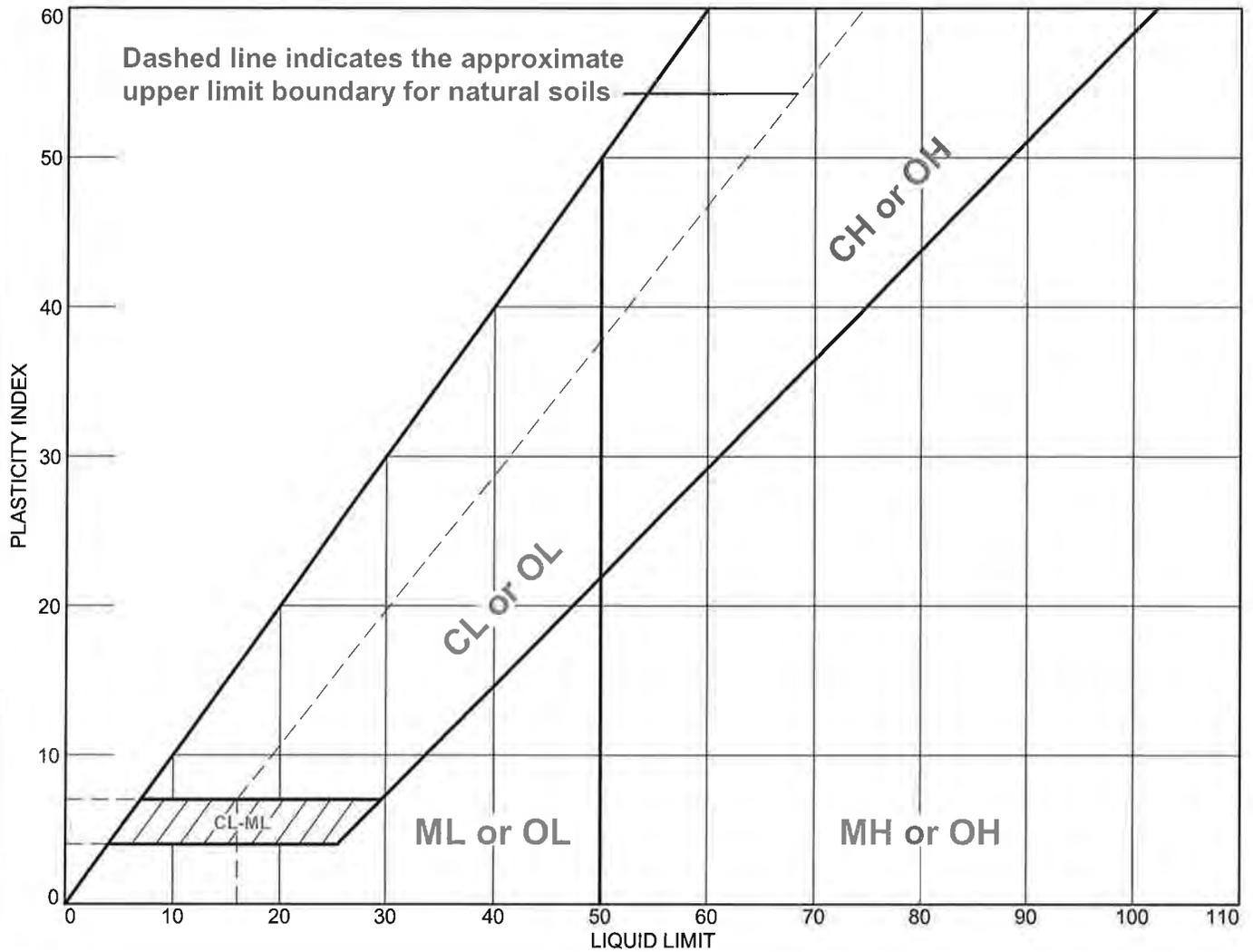


Liquid Limit= 48  
 Plastic Limit= 41  
 Plasticity Index= 7

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.533			
Dry+Tare	2.88			
Tare	1.306			
Moisture	41.5			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	19	20	NP	91	64	OL

<b>Project No.</b> <b>Project:</b> ● <b>Source of Sample:</b> VC-IRB-12-S2 <b>Sample Number:</b> L1736278-17	<b>Client:</b>  <b>Remarks:</b>  
<b>Alpha Analytical</b> <b>Mansfield, MA</b>	

Figure

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/17/2017

Location: VC-IRB-12-S2

Sample Number: L1736278-17

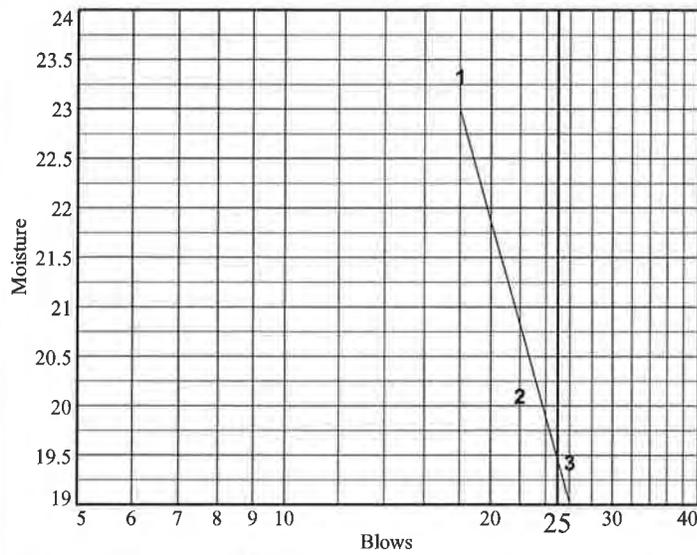
%<#40: 91

%<#200: 64

USCS: OL

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.715	8.988	9.648			
Dry+Tare	5.69	7.7	8.29			
Tare	1.297	1.293	1.301			
# Blows	18	22	26			
Moisture	23.3	20.1	19.4			



Liquid Limit= 19  
 Plastic Limit= 20  
 Plasticity Index= NP

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	4.506			
Dry+Tare	3.98			
Tare	1.291			
Moisture	19.6			

## Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624:** m/p-xylene, o-xylene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 300:** DW: Bromide

**EPA 6860:** NPW and SCM: Perchlorate

**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation

**EPA 9012B:** NPW: Total Cyanide

**EPA 9050A:** NPW: Specific Conductance

**SM3500:** NPW: Ferrous Iron

**SM4500:** NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**SM5310C:** DW: Dissolved Organic Carbon

### Mansfield Facility

**SM 2540D:** TSS

**EPA 3005A** NPW

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

**EPA 245.1 Hg.**

**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



# CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 10/10/17

ALPHA Job #: L736278

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-896-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Project Information

Project Name: US WIND  
Project Location: Delaware  
Project #: U167-022  
Project Manager: LIZ bowell  
ALPHA Quote #: 3888

## Report Information - Data Deliverables

ADEx  EMAIL

## Billing Information

Same as Client info PO #:

## Client Information

Client: ESS Group, Inc  
Address: 100 5th Ave, 5th FIR  
Waltham, Ma 02451  
Phone: 781-419-7718  
Email: mphillips@essgroup.com

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
Date Due:

## Regulatory Requirements & Project Information Requirements

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State / Fed Program DE sediments Criteria

## Additional Project Information:

\* See Liz Porta for Physical + Chemical Analysis parameter List.

ANALYSIS		SAMPLE INFO	
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH	Filtration	<input type="checkbox"/> Field <input type="checkbox"/> Lab to do
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PP13	Preservation	<input type="checkbox"/> Lab to do
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only		
PCB	PEST		
TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint			

*Physical Analysis*  
*Chemical Analysis*

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	ANALYSIS	SAMPLE INFO	Sample Comments
		Date	Time					
36278.01	VC-IRB-01	10/7/17	1820	SE	MPA-GR		X X	
02	VC-IRB-02	10/7/17	1440				X X	
03	VC-IRB-03-S1	10/7/17	1540				X X	
04	VC-IRB-03-S2	10/7/17	1550				X X	
05	VC-IRB-04	10/6/17	1840				X X	
06	VC-IRB-05-S1	10/6/17	1930				X X	
07	VC-IRB-05-S2	10/6/17	1940				X X	
08	VC-IRB-06	10/6/17	2030				X X	
09	VC-IRB-07-ALT-S1	10/7/17	1900				X X	
10	VC-IRB-07-ALT-S2	10/7/17	1910				X X	

- Container Type**  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle
- Preservative**  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type								
Preservative								

Relinquished By:	Date/Time	Received By:	Date/Time
<i>M. Phillips</i>	10/9/17/1005	<i>Tom Clark AAL</i>	10-9-17-1005
<i>Tom Clark AAL</i>	10-9-17-17:30	<i>M. Phillips</i>	10-9-17-17:30
<i>M. Phillips</i>	10-11-2015	<i>Tom Clark AAL</i>	10/9/17/2005
<i>M. Phillips</i>	10/10/2005	<i>Tom Clark AAL</i>	10/10/17 0210

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
FORM NO: 01-01 (rev. 12-Mar-2012)



# CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab:

ALPHA Job #:

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-888-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

### Project Information

Project Name: **US WIND**  
Project Location: **DELAWARE**  
Project #: **U168-022**  
Project Manager: **Liz Gowell**  
ALPHA Quote #: **3888**

### Report Information - Data Deliverables

ADEx:  EMAIL

### Billing Information

Same as Client info PO #:

### Client Information

Client: **ESS Group, Inc**  
Address: **100 5th Ave, 5th Flr**  
**Waltham, MA 02451**  
Phone: **781-419-7718**  
Email: **M.phillips@essgroup.com**

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)

Date Due:

### Regulatory Requirements & Project Information Requirements

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program **DE sediments** Criteria

Additional Project Information:

**\* See Liz Poxta for Chemical + Physical Analysis parameters.**

ANALYSIS		SAMPLE INFO
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	<input type="checkbox"/> RCP 14 <input type="checkbox"/> RCP 15	Filtration
SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH	<input type="checkbox"/> MCP 13 <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PP13	<input type="checkbox"/> Field
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14	<input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	<input type="checkbox"/> Lab to do
METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8	<input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	Preservation
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	<input type="checkbox"/> PCB <input type="checkbox"/> PEST	<input type="checkbox"/> Lab to do
VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint	Sample Comments

**Physical Analysis**  
**Chemical Analysis**

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
36278, 11	VC-IRB-08-ALT-S1	10/8/17	1810	SE	MP+SR
12	VC-IRB-08-ALT-S2	10/8/17	1820		
13	VC-IRB-08-ALT-S3	10/8/17	1830		
14	VC-IRB-09-ALT	10/8/17	1600		
15	VC-IRB-10	10/7/17	1705		
15	VC-IRB-10-MS	10/7/17	1705		
15	VC-IRB-10-MSD	10/7/17	1705		
16	VC-IRB-12-S1	10/6/17	1230		
17	VC-IRB-12-S2	10/6/17	1240		
18	VC-IRB-25	10/7/17	1445		

**Container Type**  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

**Preservative**  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type	Preservative
1/2 A	A
1/2 A	A

Relinquished By:	Date/Time	Received By:	Date/Time
M. Phillips	10/9/17/1005	Tom Clark	10-9-17 1005
Tom Clark	10/9/17 11:30	M. Phillips	10-9-17 -11:30
M. Phillips	10/9/17 2:15		
	10/10 08:00		

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
FORM NO: 01-01 (rev. 12-Mar-2012)



SUB UPS: CAPE FEAR, NC

# CHAIN OF CUSTODY

PAGE 1 OF 2



Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

## Project Information

Project Name:

Project Location: DE

Project #:

Project Manager: Elizabeth Porta

ALPHA Quote #:

## Turn-Around Time

Standard     Rush (ONLY IF PRE-APPROVED)

Due Date:    Time:

## Client Information

Client: Alpha Analytical Lab

Address: 320 Forbes Blvd

Mansfield, Ma 02048

Phone: 508-822-9300

Fax:

Email: subreports@alphalab.com, eporta@alphalab.com

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Please include Alpha job #L1736278 on this report.

Date Rec'd in Lab:

ALPHA Job #: L1736278

## Report Information Data Deliverables

FAX     EMAIL  
 ADEx     Add'l Deliverables

## Billing Information

Same as Client info    PO #:

## Regulatory Requirements/Report Limits

State/Fed Program    Criteria

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes     No    Are MCP Analytical Methods Required?  
 Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

	Dioxin 1613B	Pest 1668																
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SAMPLE HANDLING**  
 Filtration  
 Done  
 Not Needed  
 Lab to do  
 Preservation  
 Lab to do  
 (Please specify below)

**TOTAL # BOTTLES**

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
	VC-IRB-01	10/7/17	18:20	Sediment	
	VC-IRB-02	10/7/17	14:40	Sediment	
	VC-IRB-03-S1	10/7/17	15:40	Sediment	
	VC-IRB-03-S2	10/7/17	15:50	Sediment	
	VC-IRB-04	10/6/17	18:40	Sediment	
	VC-IRB-05-S1	10/6/17	19:30	Sediment	
	VC-IRB-05-S2	10/6/17	19:40	Sediment	
	VC-IRB-06	10/6/17	20:30	Sediment	
	VC-IRB-07-ALT-S1	10/7/17	19:00	Sediment	
	VC-IRB-07-ALT-S2	10/7/17	19:10	Sediment	

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	A	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Elizabeth Porta</i> - AAL	10/17/17 1700		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

SUB UPS: CAPE FEAR, NC

# CHAIN OF CUSTODY

PAGE 2 OF 2



## Project Information

Project Name:

Project Location: DE

Project #:

Project Manager: Elizabeth Porta

ALPHA Quote #:

## Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

These samples have been Previously analyzed by Alpha.

Other Project Specific Requirements/Comments/Detection Limits:

Please include Alpha job #L1736278 on this report.

Date Rec'd in Lab:

ALPHA Job #: L1736278

## Report Information Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program Criteria

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

## ANALYSIS

Dioxin 1613B	Pest 1668														
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SAMPLE HANDLING**  
 Filtration  
 Done  
 Not Needed  
 Lab to do  
 Preservation  
 Lab to do  
 (Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
	VC-IRB-08-ALT-S1	10/8/17	18:10	Sediment	
	VC-IRB-08-ALT-S2	10/8/17	18:20	Sediment	
	VC-IRB-08-ALT-S3	10/8/17	18:30	Sediment	
	VC-IRB-09-ALT	10/8/17	16:00	Sediment	
Run QC on this *	VC-IRB-10	10/7/17	17:05	Sediment	
	VC-IRB-12-S1	10/6/17	12:30	Sediment	
	VC-IRB-12-S2	10/6/17	12:40	Sediment	
	VC-IRB-25	10/7/17	14:45	Sediment	

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**IS YOUR PROJECT MA MCP or CT RCP?**

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i> - PRL	10/17/17 17:00		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

November 13, 2017

Ms. Elizabeth Porta  
Alpha Analytical Laboratory  
8 Walkup Drive  
Westborough, Massachusetts 01581

Re: US Wind DXN and PCBs  
Work Order: 11535  
SDG: L1736278

Dear Ms. Porta:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 18, 2017. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins  
Project Manager

Enclosures



# CHAIN OF CUSTODY



Westborough, MA  
TEL: 508-898-9220 FAX: 508-822-3288

Project Name:

Project Location: DE

Project #:

Project Manager: Elizabeth Porta

ALPHA Quote #:

Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Email: [subreports@alphalab.com](mailto:subreports@alphalab.com)

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Please include Alpha job #L1736278 on this report.

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
	VC-IRB-08-ALT-S1	10/8/17	18:10	Sediment	
	VC-IRB-08-ALT-S2	10/8/17	18:20	Sediment	
	VC-IRB-08-ALT-S3	10/8/17	18:30	Sediment	
	VC-IRB-09-ALT	10/8/17	16:00	Sediment	
	VC-IRB-10	10/7/17	17:05	Sediment	
	VC-IRB-12-S1	10/6/17	12:30	Sediment	
	VC-IRB-12-S2	10/6/17	12:40	Sediment	
	VC-IRB-25	10/7/17	14:45	Sediment	

PLEASE ANSWER QUESTIONS ABOVE!

## IS YOUR PROJECT MA MCP or CT RCP?

FORM NO. 01-010  
(REV. 30-JUL-07)

Relinquished By: *[Signature]*

Received By: *Cyrus Sullivan*

Date/Time: 10/17/17 17:00 Date/Time: 18 OCT 17 10:10

Date Rec'd in Lab:

ALPHA Job #: L1736278

### Report Information

FAX  EMAIL  Add'l Deliverables

### Billing Information

Same as Client info  PO #:

### Regulatory Requirements/Report Limits

State/Fed Program Criteria

### MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are CT RCP (Reasonable Confidence Protocols) Required?

### ANALYSIS

ANALYSIS	Yes	No	Yes	No	Are MCP Analytical Methods Required?	Are CT RCP (Reasonable Confidence Protocols) Required?	SAMPLE HANDLING	Sample Specific Comments	TOTAL # BOTTLES
Dioxin 1613B	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			Filtration <input type="checkbox"/> Done <input type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	L1736278-11	2
Pest 1668	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				L1736278-12	2
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				L1736278-13	2
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				L1736278-14	2
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				L1736278-15*	3
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				L1736278-16	1
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				L1736278-17	1
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				L1736278-18	2

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

**SAMPLE RECEIPT CHECKLIST**  
Cape Fear Analytical

Client: <b>ALPH</b>	Work Order: <b>11535</b>
Shipping Company: <b>UPS</b>	Date/Time Received: <b>18OCT17 1020</b>

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

\* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: \_\_\_\_\_

Serial No. 11171716-20

#	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken    damaged container    leaking container    other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags    blue ice    dry ice    none    other (describe) <b>5.6° - 4.9 = 0.7° C</b>
4	Aqueous samples found to have visible solids?		✓		Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed:  If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected:  If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected:
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

*VC-IRB-04 had a cracked lid upon arrival. Sample does not appear compromised.*

Checklist performed by: Initials: CF Date: 18 OCT 17

CF-UD-F-7

# **High Resolution Dioxins and Furans Analysis**

# Case Narrative



**HDOX Case Narrative**  
**Alpha Analytical Laboratory (ALPH)**  
**SDG L1736278**  
**Work Order 11535**

**Method/Analysis Information**

**Product:** Dioxins/Furans by EPA Method 1613B in Solids  
**Analytical Method:** EPA Method 1613B  
**Extraction Method:** SW846 3540C  
**Analytical Batch Number:** 36065  
**Clean Up Batch Number:** 36064  
**Extraction Batch Number:** 36063

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in Method 1613B:

<b>Sample ID</b>	<b>Client ID</b>
11535001	VC-IRB-01
11535002	VC-IRB-02
11535003	VC-IRB-03-S1
11535004	VC-IRB-03-S2
11535005	VC-IRB-04
11535006	VC-IRB-05-S1
11535007	VC-IRB-05-S2
11535008	VC-IRB-06
11535009	VC-IRB-07-ALT-S1
11535010	VC-IRB-07-ALT-S2
11535011	VC-IRB-08-ALT-S1
11535012	VC-IRB-08-ALT-S2
11535013	VC-IRB-08-ALT-S3
11535014	VC-IRB-09-ALT
11535015	VC-IRB-10
11535016	11535015(VC-IRB-10) Matrix Spike (MS)
11535017	11535015(VC-IRB-10) Matrix Spike Duplicate (MSD)
11535018	VC-IRB-12-S1
11535019	VC-IRB-12-S2
11535020	VC-IRB-25
12019905	Method Blank (MB)

12019906                      Laboratory Control Sample (LCS)  
12019907                      Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

### **Calibration Information**

#### **Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

#### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

### **Quality Control (QC) Information**

#### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Surrogate Recoveries**

All surrogate recoveries were within the established acceptance criteria for this SDG.

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

#### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

#### **QC Sample Designation**

Sample 11535015 (VC-IRB-10)- Batch 36065 was selected for analysis as the matrix spike and matrix spike duplicate.

**Matrix Spike/Duplicate (MS/MSD) Recovery Statement**

One MS recovery for this SDG was not within the acceptance limits. The failure confirms in the matrix spike duplicate and is attributed to matrix interference. 11535016 (VC-IRB-10) and 11535017 (VC-IRB-10)- Batch 36065.

**MS/MSD Relative Percent Difference (RPD) Statement**

One relative percent difference (RPD) between the MS and MSD was not within the acceptance limits. Sample data is validated based on acceptable LCS/LCSD results. 11535016 (VC-IRB-10) and 11535017 (VC-IRB-10)- Batch 36065.

**Technical Information****Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

**Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

**Sample Dilutions**

The samples in this SDG did not require dilutions.

**Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

**Miscellaneous Information****Nonconformance (NCR) Documentation**

The following NCR was generated for this SDG: 646668 11535016 (VC-IRB-10) and 11535017 (VC-IRB-10)- Batch 36065.

**Manual Integrations**

Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

**Sample preparation**

No difficulties were encountered during sample preparation.

**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed

systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary

## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Qualifier Definition Report for

ALPH001 Alpha Analytical Laboratory

Client SDG: L1736278 CFA Work Order: 11535

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

**Signature:** 

**Name:** Heather Patterson

**Date:** 13 NOV 2017

**Title:** Group Leader

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535001	<b>Date Collected:</b> 10/07/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 49.2
<b>Client ID:</b> VC-IRB-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 15:51	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 19.87 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.991	pg/g	0.991
40321-76-4	1,2,3,7,8-PeCDD	U	4.96	pg/g	4.96
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.96	pg/g	4.96
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.96	pg/g	4.96
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.96	pg/g	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	4.96	pg/g	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		25.2	pg/g	9.91
51207-31-9	2,3,7,8-TCDF	U	0.991	pg/g	0.991
57117-41-6	1,2,3,7,8-PeCDF	U	4.96	pg/g	4.96
57117-31-4	2,3,4,7,8-PeCDF	U	4.96	pg/g	4.96
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.96	pg/g	4.96
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.96	pg/g	4.96
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.96	pg/g	4.96
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.96	pg/g	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.96	pg/g	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.96	pg/g	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.91	pg/g	9.91
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	0.991	pg/g	0.991
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.96	pg/g	4.96
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	4.96	pg/g	4.96
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	4.96	pg/g	4.96
30402-14-3	Total Tetrachlorodibenzofuran	U	0.991	pg/g	0.991
30402-15-4	Total Pentachlorodibenzofuran	U	4.96	pg/g	4.96
55684-94-1	Total Hexachlorodibenzofuran	U	4.96	pg/g	4.96
38998-75-3	Total Heptachlorodibenzofuran	U	4.96	pg/g	4.96
3333-30-0	TEQ WHO2005 ND=0		0.00756	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.66	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		130	198	pg/g	65.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		148	198	pg/g	74.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		154	198	pg/g	77.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		148	198	pg/g	74.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		153	198	pg/g	77.0	(23%-140%)
13C-OCDD		280	397	pg/g	70.6	(17%-157%)
13C-2,3,7,8-TCDF		118	198	pg/g	59.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		146	198	pg/g	73.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		146	198	pg/g	73.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	198	pg/g	72.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	198	pg/g	72.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		144	198	pg/g	72.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		146	198	pg/g	73.4	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535001	<b>Date Collected:</b> 10/07/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 49.2
<b>Client ID:</b> VC-IRB-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 15:51	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 19.87 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			145	198	pg/g	73.2 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			142	198	pg/g	71.5 (26%-138%)
37Cl-2,3,7,8-TCDD			16.3	19.8	pg/g	82.1 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535002	<b>Date Collected:</b> 10/07/2017 14:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 16:38	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1.05	pg/g	1.05
40321-76-4	1,2,3,7,8-PeCDD	U	5.27	pg/g	5.27
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.27	pg/g	5.27
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.27	pg/g	5.27
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.27	pg/g	5.27
35822-46-9	1,2,3,4,6,7,8-HpCDD		67.8	pg/g	5.27
3268-87-9	1,2,3,4,6,7,8,9-OCDD		999	pg/g	10.5
51207-31-9	2,3,7,8-TCDF		1.15	pg/g	1.05
57117-41-6	1,2,3,7,8-PeCDF	U	5.27	pg/g	5.27
57117-31-4	2,3,4,7,8-PeCDF	U	5.27	pg/g	5.27
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.27	pg/g	5.27
57117-44-9	1,2,3,6,7,8-HxCDF	U	5.27	pg/g	5.27
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.27	pg/g	5.27
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.27	pg/g	5.27
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5.27	pg/g	5.27
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.27	pg/g	5.27
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10.5	pg/g	10.5
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		4.17	pg/g	1.05
36088-22-9	Total Pentachlorodibenzo-p-dioxin		5.68	pg/g	5.27
34465-46-8	Total Hexachlorodibenzo-p-dioxin		82.6	pg/g	5.27
37871-00-4	Total Heptachlorodibenzo-p-dioxin		232	pg/g	5.27
30402-14-3	Total Tetrachlorodibenzofuran		4.64	pg/g	1.05
30402-15-4	Total Pentachlorodibenzofuran	U	5.27	pg/g	5.27
55684-94-1	Total Hexachlorodibenzofuran	U	5.27	pg/g	5.27
38998-75-3	Total Heptachlorodibenzofuran	U	5.27	pg/g	5.27
3333-30-0	TEQ WHO2005 ND=0		1.09	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		7.03	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	211	pg/g	70.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		167	211	pg/g	79.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		167	211	pg/g	79.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	211	pg/g	80.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		170	211	pg/g	80.6	(23%-140%)
13C-OCDD		330	422	pg/g	78.1	(17%-157%)
13C-2,3,7,8-TCDF		144	211	pg/g	68.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		165	211	pg/g	78.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		167	211	pg/g	79.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		164	211	pg/g	77.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		164	211	pg/g	77.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		164	211	pg/g	77.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		166	211	pg/g	78.6	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535002	<b>Date Collected:</b> 10/07/2017 14:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 16:38	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.02 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			166	211	pg/g	78.8 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			161	211	pg/g	76.6 (26%-138%)
37Cl-2,3,7,8-TCDD			17.5	21.1	pg/g	83.1 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535002	<b>Date Collected:</b> 10/07/2017 14:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 17:42	<b>Analyst:</b> CLP	<b>Instrument:</b> HRP763
<b>Data File:</b> b07nov17a_2-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
51207-31-9	2,3,7,8-TCDF		1.38	pg/g	1.05

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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**Comments:**

- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535003	<b>Date Collected:</b> 10/07/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 38.7
<b>Client ID:</b> VC-IRB-03-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 17:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 16.3 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		7.57	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		110	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin		6.84	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin		24.6	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	1	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.109	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.79	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		158	200	pg/g	78.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		178	200	pg/g	89.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		166	200	pg/g	82.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	200	pg/g	84.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		165	200	pg/g	82.4	(23%-140%)
13C-OCDD		316	400	pg/g	78.9	(17%-157%)
13C-2,3,7,8-TCDF		148	200	pg/g	73.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		168	200	pg/g	84.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		176	200	pg/g	88.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		160	200	pg/g	79.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		161	200	pg/g	80.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		165	200	pg/g	82.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		167	200	pg/g	83.6	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535003	<b>Date Collected:</b> 10/07/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 38.7
<b>Client ID:</b> VC-IRB-03-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 17:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 16.3 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			164	200	pg/g	82.0 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			159	200	pg/g	79.4 (26%-138%)
37Cl-2,3,7,8-TCDD			17.2	20.0	pg/g	86.2 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535004	<b>Date Collected:</b> 10/07/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 57.2
<b>Client ID:</b> VC-IRB-03-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 18:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 23.47 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.996	pg/g	0.996
40321-76-4	1,2,3,7,8-PeCDD	U	4.98	pg/g	4.98
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.98	pg/g	4.98
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.98	pg/g	4.98
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.98	pg/g	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	4.98	pg/g	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD		97.0	pg/g	9.96
51207-31-9	2,3,7,8-TCDF	U	0.996	pg/g	0.996
57117-41-6	1,2,3,7,8-PeCDF	U	4.98	pg/g	4.98
57117-31-4	2,3,4,7,8-PeCDF	U	4.98	pg/g	4.98
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.98	pg/g	4.98
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.98	pg/g	4.98
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.98	pg/g	4.98
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.98	pg/g	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.98	pg/g	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.98	pg/g	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.96	pg/g	9.96
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		2.49	pg/g	0.996
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.98	pg/g	4.98
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	4.98	pg/g	4.98
37871-00-4	Total Heptachlorodibenzo-p-dioxin		8.56	pg/g	4.98
30402-14-3	Total Tetrachlorodibenzofuran	U	0.996	pg/g	0.996
30402-15-4	Total Pentachlorodibenzofuran	U	4.98	pg/g	4.98
55684-94-1	Total Hexachlorodibenzofuran	U	4.98	pg/g	4.98
38998-75-3	Total Heptachlorodibenzofuran	U	4.98	pg/g	4.98
3333-30-0	TEQ WHO2005 ND=0		0.0291	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.71	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	199	pg/g	74.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		167	199	pg/g	84.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		164	199	pg/g	82.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		167	199	pg/g	83.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		163	199	pg/g	81.8	(23%-140%)
13C-OCDD		308	398	pg/g	77.2	(17%-157%)
13C-2,3,7,8-TCDF		137	199	pg/g	68.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		165	199	pg/g	83.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		168	199	pg/g	84.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		157	199	pg/g	79.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		157	199	pg/g	78.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		162	199	pg/g	81.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		162	199	pg/g	81.3	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535004	<b>Date Collected:</b> 10/07/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 57.2
<b>Client ID:</b> VC-IRB-03-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 18:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 23.47 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			160	199	pg/g	80.2 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			151	199	pg/g	75.9 (26%-138%)
37Cl-2,3,7,8-TCDD			15.8	19.9	pg/g	79.2 (35%-197%)

**Comments:**

- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535005	<b>Date Collected:</b> 10/06/2017 18:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.6
<b>Client ID:</b> VC-IRB-04		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 18:59	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 20.1 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1.01	pg/g	1.01
40321-76-4	1,2,3,7,8-PeCDD	U	5.03	pg/g	5.03
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.03	pg/g	5.03
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.03	pg/g	5.03
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.03	pg/g	5.03
35822-46-9	1,2,3,4,6,7,8-HpCDD		21.0	pg/g	5.03
3268-87-9	1,2,3,4,6,7,8,9-OCDD		202	pg/g	10.1
51207-31-9	2,3,7,8-TCDF	U	1.01	pg/g	1.01
57117-41-6	1,2,3,7,8-PeCDF	U	5.03	pg/g	5.03
57117-31-4	2,3,4,7,8-PeCDF	U	5.03	pg/g	5.03
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.03	pg/g	5.03
57117-44-9	1,2,3,6,7,8-HxCDF	U	5.03	pg/g	5.03
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.03	pg/g	5.03
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.03	pg/g	5.03
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5.03	pg/g	5.03
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.03	pg/g	5.03
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10.1	pg/g	10.1
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1.01	pg/g	1.01
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5.03	pg/g	5.03
34465-46-8	Total Hexachlorodibenzo-p-dioxin		25.5	pg/g	5.03
37871-00-4	Total Heptachlorodibenzo-p-dioxin		63.0	pg/g	5.03
30402-14-3	Total Tetrachlorodibenzofuran	U	1.01	pg/g	1.01
30402-15-4	Total Pentachlorodibenzofuran	U	5.03	pg/g	5.03
55684-94-1	Total Hexachlorodibenzofuran	U	5.03	pg/g	5.03
38998-75-3	Total Heptachlorodibenzofuran	U	5.03	pg/g	5.03
3333-30-0	TEQ WHO2005 ND=0		0.270	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.98	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	201	pg/g	77.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		179	201	pg/g	88.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		171	201	pg/g	84.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		164	201	pg/g	81.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		171	201	pg/g	85.0	(23%-140%)
13C-OCDD		327	403	pg/g	81.3	(17%-157%)
13C-2,3,7,8-TCDF		149	201	pg/g	74.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		178	201	pg/g	88.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		178	201	pg/g	88.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	201	pg/g	79.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		163	201	pg/g	81.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		165	201	pg/g	82.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		169	201	pg/g	83.8	(29%-147%)



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535005	<b>Date Collected:</b> 10/06/2017 18:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.6
<b>Client ID:</b> VC-IRB-04		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 18:59	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 20.1 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			161	201	pg/g	80.0 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			163	201	pg/g	81.0 (26%-138%)
37Cl-2,3,7,8-TCDD			16.8	20.1	pg/g	83.2 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535006	<b>Date Collected:</b> 10/06/2017 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 58.1
<b>Client ID:</b> VC-IRB-05-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 19:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 23.82 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		6.49	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		133	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2480	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		1.40	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		11.9	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin		25.5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin		177	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin		495	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran		11.9	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		2.86	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		8.24	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		163	200	pg/g	81.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		188	200	pg/g	94.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		177	200	pg/g	88.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		175	200	pg/g	87.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		179	200	pg/g	89.4	(23%-140%)
13C-OCDD		369	400	pg/g	92.3	(17%-157%)
13C-2,3,7,8-TCDF		158	200	pg/g	78.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		187	200	pg/g	93.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		187	200	pg/g	93.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		165	200	pg/g	82.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		171	200	pg/g	85.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		171	200	pg/g	85.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		174	200	pg/g	86.9	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535006	<b>Date Collected:</b> 10/06/2017 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 58.1
<b>Client ID:</b> VC-IRB-05-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 19:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 23.82 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			173	200	pg/g	86.3 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			163	200	pg/g	81.4 (26%-138%)
37Cl-2,3,7,8-TCDD			16.9	20.0	pg/g	84.4 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535006	<b>Date Collected:</b> 10/06/2017 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 58.1
<b>Client ID:</b> VC-IRB-05-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/09/2017 12:44	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A09NOV17A-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 23.82 g	

CAS No.	Parmname	Qual	Result	Units	PQL
51207-31-9	2,3,7,8-TCDF		1.60	pg/g	1.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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**Comments:**

- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535007	<b>Date Collected:</b> 10/06/2017 19:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84.7
<b>Client ID:</b> VC-IRB-05-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 20:33	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.14 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	2.61	pg/g	2.61
40321-76-4	1,2,3,7,8-PeCDD	U	13	pg/g	13.0
39227-28-6	1,2,3,4,7,8-HxCDD	U	13	pg/g	13.0
57653-85-7	1,2,3,6,7,8-HxCDD	U	13	pg/g	13.0
19408-74-3	1,2,3,7,8,9-HxCDD	U	13	pg/g	13.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	13	pg/g	13.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		64.2	pg/g	26.1
51207-31-9	2,3,7,8-TCDF	U	2.61	pg/g	2.61
57117-41-6	1,2,3,7,8-PeCDF	U	13	pg/g	13.0
57117-31-4	2,3,4,7,8-PeCDF	U	13	pg/g	13.0
70648-26-9	1,2,3,4,7,8-HxCDF	U	13	pg/g	13.0
57117-44-9	1,2,3,6,7,8-HxCDF	U	13	pg/g	13.0
60851-34-5	2,3,4,6,7,8-HxCDF	U	13	pg/g	13.0
72918-21-9	1,2,3,7,8,9-HxCDF	U	13	pg/g	13.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	13	pg/g	13.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	13	pg/g	13.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	26.1	pg/g	26.1
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		23.7	pg/g	2.61
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	13	pg/g	13.0
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	13	pg/g	13.0
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	13	pg/g	13.0
30402-14-3	Total Tetrachlorodibenzofuran		14.8	pg/g	2.61
30402-15-4	Total Pentachlorodibenzofuran	U	13	pg/g	13.0
55684-94-1	Total Hexachlorodibenzofuran	U	13	pg/g	13.0
38998-75-3	Total Heptachlorodibenzofuran	U	13	pg/g	13.0
3333-30-0	TEQ WHO2005 ND=0		0.0193	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		14.9	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		451	522	pg/g	86.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		540	522	pg/g	103	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		497	522	pg/g	95.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		501	522	pg/g	96.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		496	522	pg/g	95.0	(23%-140%)
13C-OCDD		880	1040	pg/g	84.4	(17%-157%)
13C-2,3,7,8-TCDF		434	522	pg/g	83.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		520	522	pg/g	99.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		551	522	pg/g	106	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		480	522	pg/g	92.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		470	522	pg/g	90.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		473	522	pg/g	90.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		515	522	pg/g	98.8	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535007	<b>Date Collected:</b> 10/06/2017 19:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84.7
<b>Client ID:</b> VC-IRB-05-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 20:33	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.14 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			472	522	pg/g	90.6 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			470	522	pg/g	90.1 (26%-138%)
37Cl-2,3,7,8-TCDD			45.1	52.2	pg/g	86.5 (35%-197%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535008	<b>Date Collected:</b> 10/06/2017 20:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 65.8
<b>Client ID:</b> VC-IRB-06		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 21:20	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-12		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1.17	pg/g	1.17
40321-76-4	1,2,3,7,8-PeCDD	U	5.85	pg/g	5.85
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.85	pg/g	5.85
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.85	pg/g	5.85
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.85	pg/g	5.85
35822-46-9	1,2,3,4,6,7,8-HpCDD		12.5	pg/g	5.85
3268-87-9	1,2,3,4,6,7,8,9-OCDD		188	pg/g	11.7
51207-31-9	2,3,7,8-TCDF	U	1.17	pg/g	1.17
57117-41-6	1,2,3,7,8-PeCDF	U	5.85	pg/g	5.85
57117-31-4	2,3,4,7,8-PeCDF	U	5.85	pg/g	5.85
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.85	pg/g	5.85
57117-44-9	1,2,3,6,7,8-HxCDF	U	5.85	pg/g	5.85
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.85	pg/g	5.85
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.85	pg/g	5.85
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5.85	pg/g	5.85
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.85	pg/g	5.85
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	11.7	pg/g	11.7
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1.17	pg/g	1.17
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5.85	pg/g	5.85
34465-46-8	Total Hexachlorodibenzo-p-dioxin		14.4	pg/g	5.85
37871-00-4	Total Heptachlorodibenzo-p-dioxin		47.6	pg/g	5.85
30402-14-3	Total Tetrachlorodibenzofuran		3.11	pg/g	1.17
30402-15-4	Total Pentachlorodibenzofuran	U	5.85	pg/g	5.85
55684-94-1	Total Hexachlorodibenzofuran	U	5.85	pg/g	5.85
38998-75-3	Total Heptachlorodibenzofuran	U	5.85	pg/g	5.85
3333-30-0	TEQ WHO2005 ND=0		0.182	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.82	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		133	234	pg/g	56.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		160	234	pg/g	68.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		158	234	pg/g	67.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	234	pg/g	72.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		169	234	pg/g	72.3	(23%-140%)
13C-OCDD		318	468	pg/g	68.0	(17%-157%)
13C-2,3,7,8-TCDF		124	234	pg/g	52.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		155	234	pg/g	66.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		155	234	pg/g	66.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	234	pg/g	69.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		161	234	pg/g	68.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	234	pg/g	65.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	234	pg/g	68.0	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535008	<b>Date Collected:</b> 10/06/2017 20:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 65.8
<b>Client ID:</b> VC-IRB-06		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 21:20	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-12		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			166	234	pg/g	71.0 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			158	234	pg/g	67.6 (26%-138%)
37Cl-2,3,7,8-TCDD			17.8	23.4	pg/g	75.9 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535009	<b>Date Collected:</b> 10/07/2017 19:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-07-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 22:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.23 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1.04	pg/g	1.04
40321-76-4	1,2,3,7,8-PeCDD	U	5.22	pg/g	5.22
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.22	pg/g	5.22
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.22	pg/g	5.22
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.22	pg/g	5.22
35822-46-9	1,2,3,4,6,7,8-HpCDD		12.8	pg/g	5.22
3268-87-9	1,2,3,4,6,7,8,9-OCDD		224	pg/g	10.4
51207-31-9	2,3,7,8-TCDF	U	1.04	pg/g	1.04
57117-41-6	1,2,3,7,8-PeCDF	U	5.22	pg/g	5.22
57117-31-4	2,3,4,7,8-PeCDF	U	5.22	pg/g	5.22
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.22	pg/g	5.22
57117-44-9	1,2,3,6,7,8-HxCDF	U	5.22	pg/g	5.22
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.22	pg/g	5.22
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.22	pg/g	5.22
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5.22	pg/g	5.22
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.22	pg/g	5.22
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10.4	pg/g	10.4
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1.04	pg/g	1.04
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5.22	pg/g	5.22
34465-46-8	Total Hexachlorodibenzo-p-dioxin		11.4	pg/g	5.22
37871-00-4	Total Heptachlorodibenzo-p-dioxin		45.5	pg/g	5.22
30402-14-3	Total Tetrachlorodibenzofuran	U	1.04	pg/g	1.04
30402-15-4	Total Pentachlorodibenzofuran	U	5.22	pg/g	5.22
55684-94-1	Total Hexachlorodibenzofuran	U	5.22	pg/g	5.22
38998-75-3	Total Heptachlorodibenzofuran	U	5.22	pg/g	5.22
3333-30-0	TEQ WHO2005 ND=0		0.196	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.13	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	209	pg/g	77.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		190	209	pg/g	91.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		181	209	pg/g	86.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		188	209	pg/g	89.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		180	209	pg/g	86.2	(23%-140%)
13C-OCDD		341	418	pg/g	81.6	(17%-157%)
13C-2,3,7,8-TCDF		156	209	pg/g	74.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		186	209	pg/g	89.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		191	209	pg/g	91.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		170	209	pg/g	81.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		178	209	pg/g	85.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		179	209	pg/g	85.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		176	209	pg/g	84.2	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535009	<b>Date Collected:</b> 10/07/2017 19:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-07-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 22:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.23 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			178	209	pg/g	85.3 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			171	209	pg/g	81.7 (26%-138%)
37Cl-2,3,7,8-TCDD			16.9	20.9	pg/g	80.8 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535010	<b>Date Collected:</b> 10/07/2017 19:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.4
<b>Client ID:</b> VC-IRB-07-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 22:54	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-14		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 12.1 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	5	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		45.0	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		1.05	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	5	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin		6.10	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	1	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.0135	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.72	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	200	pg/g	74.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		177	200	pg/g	88.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	200	pg/g	81.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	200	pg/g	84.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		164	200	pg/g	81.9	(23%-140%)
13C-OCDD		304	400	pg/g	75.9	(17%-157%)
13C-2,3,7,8-TCDF		145	200	pg/g	72.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		173	200	pg/g	86.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		180	200	pg/g	90.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		160	200	pg/g	80.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		172	200	pg/g	86.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		164	200	pg/g	82.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		168	200	pg/g	84.0	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535010	<b>Date Collected:</b> 10/07/2017 19:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.4
<b>Client ID:</b> VC-IRB-07-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 22:54	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-14		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 12.1 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			166	200	pg/g	82.7 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			162	200	pg/g	81.0 (26%-138%)
37Cl-2,3,7,8-TCDD			15.0	20.0	pg/g	75.0 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 01:22	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 20.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.988	pg/g	0.988
40321-76-4	1,2,3,7,8-PeCDD	U	4.94	pg/g	4.94
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.94	pg/g	4.94
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.94	pg/g	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.94	pg/g	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		66.7	pg/g	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1150	pg/g	9.88
51207-31-9	2,3,7,8-TCDF	U	0.988	pg/g	0.988
57117-41-6	1,2,3,7,8-PeCDF	U	4.94	pg/g	4.94
57117-31-4	2,3,4,7,8-PeCDF	U	4.94	pg/g	4.94
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.94	pg/g	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.94	pg/g	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.94	pg/g	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.94	pg/g	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.94	pg/g	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.94	pg/g	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.88	pg/g	9.88
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		5.77	pg/g	0.988
36088-22-9	Total Pentachlorodibenzo-p-dioxin		5.23	pg/g	4.94
34465-46-8	Total Hexachlorodibenzo-p-dioxin		82.5	pg/g	4.94
37871-00-4	Total Heptachlorodibenzo-p-dioxin		242	pg/g	4.94
30402-14-3	Total Tetrachlorodibenzofuran		2.42	pg/g	0.988
30402-15-4	Total Pentachlorodibenzofuran	U	4.94	pg/g	4.94
55684-94-1	Total Hexachlorodibenzofuran	U	4.94	pg/g	4.94
38998-75-3	Total Heptachlorodibenzofuran	U	4.94	pg/g	4.94
3333-30-0	TEQ WHO2005 ND=0		1.01	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.63	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		152	198	pg/g	77.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		181	198	pg/g	91.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		164	198	pg/g	82.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		180	198	pg/g	90.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		172	198	pg/g	86.8	(23%-140%)
13C-OCDD		339	395	pg/g	85.8	(17%-157%)
13C-2,3,7,8-TCDF		140	198	pg/g	70.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		175	198	pg/g	88.7	(24%-185%)
13C-2,3,4,7,8-PeCDF		181	198	pg/g	91.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		165	198	pg/g	83.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		170	198	pg/g	85.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		165	198	pg/g	83.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		169	198	pg/g	85.5	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 01:22	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 20.36 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			165	198	pg/g	83.6 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			158	198	pg/g	79.8 (26%-138%)
37Cl-2,3,7,8-TCDD			15.6	19.8	pg/g	79.0 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 18:02	<b>Analyst:</b> CLP	<b>Instrument:</b> HRP763
<b>Data File:</b> b07nov17a_2-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 20.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
51207-31-9	2,3,7,8-TCDF		1.32	pg/g	0.988

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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**Comments:**

- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535012	<b>Date Collected:</b> 10/08/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84
<b>Client ID:</b> VC-IRB-08-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 02:09	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.19 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	2.48	pg/g	2.48
40321-76-4	1,2,3,7,8-PeCDD	U	12.4	pg/g	12.4
39227-28-6	1,2,3,4,7,8-HxCDD	U	12.4	pg/g	12.4
57653-85-7	1,2,3,6,7,8-HxCDD	U	12.4	pg/g	12.4
19408-74-3	1,2,3,7,8,9-HxCDD	U	12.4	pg/g	12.4
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	12.4	pg/g	12.4
3268-87-9	1,2,3,4,6,7,8,9-OCDD		61.0	pg/g	24.8
51207-31-9	2,3,7,8-TCDF	U	2.48	pg/g	2.48
57117-41-6	1,2,3,7,8-PeCDF	U	12.4	pg/g	12.4
57117-31-4	2,3,4,7,8-PeCDF	U	12.4	pg/g	12.4
70648-26-9	1,2,3,4,7,8-HxCDF	U	12.4	pg/g	12.4
57117-44-9	1,2,3,6,7,8-HxCDF	U	12.4	pg/g	12.4
60851-34-5	2,3,4,6,7,8-HxCDF	U	12.4	pg/g	12.4
72918-21-9	1,2,3,7,8,9-HxCDF	U	12.4	pg/g	12.4
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	12.4	pg/g	12.4
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	12.4	pg/g	12.4
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	24.8	pg/g	24.8
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	2.48	pg/g	2.48
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	12.4	pg/g	12.4
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	12.4	pg/g	12.4
37871-00-4	Total Heptachlorodibenzo-p-dioxin		12.4	pg/g	12.4
30402-14-3	Total Tetrachlorodibenzofuran	U	2.48	pg/g	2.48
30402-15-4	Total Pentachlorodibenzofuran	U	12.4	pg/g	12.4
55684-94-1	Total Hexachlorodibenzofuran	U	12.4	pg/g	12.4
38998-75-3	Total Heptachlorodibenzofuran	U	12.4	pg/g	12.4
3333-30-0	TEQ WHO2005 ND=0		0.0183	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		14.1	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		357	495	pg/g	72.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		418	495	pg/g	84.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		374	495	pg/g	75.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		407	495	pg/g	82.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		394	495	pg/g	79.5	(23%-140%)
13C-OCDD		718	991	pg/g	72.4	(17%-157%)
13C-2,3,7,8-TCDF		331	495	pg/g	66.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		401	495	pg/g	81.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		424	495	pg/g	85.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		371	495	pg/g	74.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		376	495	pg/g	75.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		379	495	pg/g	76.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		388	495	pg/g	78.3	(29%-147%)



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535012	<b>Date Collected:</b> 10/08/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84
<b>Client ID:</b> VC-IRB-08-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 02:09	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.19 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			392	495	pg/g	79.2 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			373	495	pg/g	75.2 (26%-138%)
37Cl-2,3,7,8-TCDD			40.6	49.5	pg/g	82.0 (35%-197%)

**Comments:**

- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535013	<b>Date Collected:</b> 10/08/2017 18:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.4
<b>Client ID:</b> VC-IRB-08-ALT-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 02:56	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 12.41 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.987	pg/g	0.987
40321-76-4	1,2,3,7,8-PeCDD	U	4.94	pg/g	4.94
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.94	pg/g	4.94
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.94	pg/g	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.94	pg/g	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		25.7	pg/g	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD		492	pg/g	9.87
51207-31-9	2,3,7,8-TCDF	U	0.987	pg/g	0.987
57117-41-6	1,2,3,7,8-PeCDF	U	4.94	pg/g	4.94
57117-31-4	2,3,4,7,8-PeCDF	U	4.94	pg/g	4.94
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.94	pg/g	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.94	pg/g	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.94	pg/g	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.94	pg/g	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.94	pg/g	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.94	pg/g	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.87	pg/g	9.87
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		1.40	pg/g	0.987
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.94	pg/g	4.94
34465-46-8	Total Hexachlorodibenzo-p-dioxin		12.9	pg/g	4.94
37871-00-4	Total Heptachlorodibenzo-p-dioxin		60.7	pg/g	4.94
30402-14-3	Total Tetrachlorodibenzofuran	U	0.987	pg/g	0.987
30402-15-4	Total Pentachlorodibenzofuran	U	4.94	pg/g	4.94
55684-94-1	Total Hexachlorodibenzofuran	U	4.94	pg/g	4.94
38998-75-3	Total Heptachlorodibenzofuran	U	4.94	pg/g	4.94
3333-30-0	TEQ WHO2005 ND=0		0.404	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.01	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	197	pg/g	79.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		184	197	pg/g	93.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		158	197	pg/g	80.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		179	197	pg/g	90.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		170	197	pg/g	86.0	(23%-140%)
13C-OCDD		330	395	pg/g	83.6	(17%-157%)
13C-2,3,7,8-TCDF		147	197	pg/g	74.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		176	197	pg/g	89.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		180	197	pg/g	91.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		158	197	pg/g	79.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		158	197	pg/g	80.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		163	197	pg/g	82.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		162	197	pg/g	82.2	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535013	<b>Date Collected:</b> 10/08/2017 18:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.4
<b>Client ID:</b> VC-IRB-08-ALT-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 02:56	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 12.41 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			161	197	pg/g	81.4 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			161	197	pg/g	81.3 (26%-138%)
37Cl-2,3,7,8-TCDD			16.7	19.7	pg/g	84.5 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535014	<b>Date Collected:</b> 10/08/2017 16:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 51.7
<b>Client ID:</b> VC-IRB-09-ALT		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 03:43	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 20.32 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1.02	pg/g	1.02
40321-76-4	1,2,3,7,8-PeCDD	U	5.1	pg/g	5.10
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.1	pg/g	5.10
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.1	pg/g	5.10
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.1	pg/g	5.10
35822-46-9	1,2,3,4,6,7,8-HpCDD		24.2	pg/g	5.10
3268-87-9	1,2,3,4,6,7,8,9-OCDD		379	pg/g	10.2
51207-31-9	2,3,7,8-TCDF	U	1.02	pg/g	1.02
57117-41-6	1,2,3,7,8-PeCDF	U	5.1	pg/g	5.10
57117-31-4	2,3,4,7,8-PeCDF	U	5.1	pg/g	5.10
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.1	pg/g	5.10
57117-44-9	1,2,3,6,7,8-HxCDF	U	5.1	pg/g	5.10
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.1	pg/g	5.10
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.1	pg/g	5.10
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5.1	pg/g	5.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.1	pg/g	5.10
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10.2	pg/g	10.2
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		1.93	pg/g	1.02
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5.1	pg/g	5.10
34465-46-8	Total Hexachlorodibenzo-p-dioxin		38.6	pg/g	5.10
37871-00-4	Total Heptachlorodibenzo-p-dioxin		95.5	pg/g	5.10
30402-14-3	Total Tetrachlorodibenzofuran	U	1.02	pg/g	1.02
30402-15-4	Total Pentachlorodibenzofuran	U	5.1	pg/g	5.10
55684-94-1	Total Hexachlorodibenzofuran	U	5.1	pg/g	5.10
38998-75-3	Total Heptachlorodibenzofuran	U	5.1	pg/g	5.10
3333-30-0	TEQ WHO2005 ND=0		0.356	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.14	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	204	pg/g	76.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		186	204	pg/g	91.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		174	204	pg/g	85.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		178	204	pg/g	87.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		174	204	pg/g	85.4	(23%-140%)
13C-OCDD		329	408	pg/g	80.7	(17%-157%)
13C-2,3,7,8-TCDF		145	204	pg/g	71.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		182	204	pg/g	89.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		183	204	pg/g	89.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		164	204	pg/g	80.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		172	204	pg/g	84.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		169	204	pg/g	83.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		167	204	pg/g	81.7	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535014	<b>Date Collected:</b> 10/08/2017 16:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 51.7
<b>Client ID:</b> VC-IRB-09-ALT		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 03:43	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 20.32 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			172	204	pg/g	84.2 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			161	204	pg/g	79.0 (26%-138%)
37Cl-2,3,7,8-TCDD			16.4	20.4	pg/g	80.3 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535015	<b>Date Collected:</b> 10/07/2017 17:05	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 42.8
<b>Client ID:</b> VC-IRB-10		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 04:30	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 17.56 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.996	pg/g	0.996
40321-76-4	1,2,3,7,8-PeCDD	U	4.98	pg/g	4.98
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.98	pg/g	4.98
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.98	pg/g	4.98
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.98	pg/g	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD		33.1	pg/g	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD		553	pg/g	9.96
51207-31-9	2,3,7,8-TCDF	U	0.996	pg/g	0.996
57117-41-6	1,2,3,7,8-PeCDF	U	4.98	pg/g	4.98
57117-31-4	2,3,4,7,8-PeCDF	U	4.98	pg/g	4.98
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.98	pg/g	4.98
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.98	pg/g	4.98
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.98	pg/g	4.98
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.98	pg/g	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.98	pg/g	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.98	pg/g	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.96	pg/g	9.96
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		2.79	pg/g	0.996
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.98	pg/g	4.98
34465-46-8	Total Hexachlorodibenzo-p-dioxin		59.1	pg/g	4.98
37871-00-4	Total Heptachlorodibenzo-p-dioxin		140	pg/g	4.98
30402-14-3	Total Tetrachlorodibenzofuran		1.10	pg/g	0.996
30402-15-4	Total Pentachlorodibenzofuran	U	4.98	pg/g	4.98
55684-94-1	Total Hexachlorodibenzofuran	U	4.98	pg/g	4.98
38998-75-3	Total Heptachlorodibenzofuran	U	4.98	pg/g	4.98
3333-30-0	TEQ WHO2005 ND=0		0.497	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.15	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		161	199	pg/g	80.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		190	199	pg/g	95.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		171	199	pg/g	85.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		179	199	pg/g	89.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		174	199	pg/g	87.6	(23%-140%)
13C-OCDD		337	399	pg/g	84.6	(17%-157%)
13C-2,3,7,8-TCDF		149	199	pg/g	74.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		182	199	pg/g	91.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		186	199	pg/g	93.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		164	199	pg/g	82.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		172	199	pg/g	86.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		167	199	pg/g	83.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		169	199	pg/g	84.8	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535015	<b>Date Collected:</b> 10/07/2017 17:05	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 42.8
<b>Client ID:</b> VC-IRB-10		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 04:30	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 17.56 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			164	199	pg/g	82.1 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			163	199	pg/g	81.9 (26%-138%)
37Cl-2,3,7,8-TCDD			16.9	19.9	pg/g	84.8 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535018	<b>Date Collected:</b> 10/06/2017 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 20
<b>Client ID:</b> VC-IRB-12-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 06:51	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 12.53 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.997	pg/g	0.997
40321-76-4	1,2,3,7,8-PeCDD	U	4.99	pg/g	4.99
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.99	pg/g	4.99
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.99	pg/g	4.99
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.99	pg/g	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD		5.07	pg/g	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		79.9	pg/g	9.97
51207-31-9	2,3,7,8-TCDF	U	0.997	pg/g	0.997
57117-41-6	1,2,3,7,8-PeCDF	U	4.99	pg/g	4.99
57117-31-4	2,3,4,7,8-PeCDF	U	4.99	pg/g	4.99
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.99	pg/g	4.99
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.99	pg/g	4.99
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.99	pg/g	4.99
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.99	pg/g	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.99	pg/g	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.99	pg/g	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.97	pg/g	9.97
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	0.997	pg/g	0.997
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.99	pg/g	4.99
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	4.99	pg/g	4.99
37871-00-4	Total Heptachlorodibenzo-p-dioxin		18.2	pg/g	4.99
30402-14-3	Total Tetrachlorodibenzofuran	U	0.997	pg/g	0.997
30402-15-4	Total Pentachlorodibenzofuran	U	4.99	pg/g	4.99
55684-94-1	Total Hexachlorodibenzofuran	U	4.99	pg/g	4.99
38998-75-3	Total Heptachlorodibenzofuran	U	4.99	pg/g	4.99
3333-30-0	TEQ WHO2005 ND=0		0.0746	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.73	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		141	199	pg/g	70.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		173	199	pg/g	87.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		153	199	pg/g	76.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	199	pg/g	81.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		155	199	pg/g	78.0	(23%-140%)
13C-OCDD		285	399	pg/g	71.4	(17%-157%)
13C-2,3,7,8-TCDF		131	199	pg/g	65.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		167	199	pg/g	83.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		174	199	pg/g	87.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	199	pg/g	73.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		156	199	pg/g	78.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		150	199	pg/g	75.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		155	199	pg/g	77.6	(29%-147%)



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535018	<b>Date Collected:</b> 10/06/2017 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 20
<b>Client ID:</b> VC-IRB-12-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 06:51	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 12.53 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			154	199	pg/g	77.2 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			153	199	pg/g	76.8 (26%-138%)
37Cl-2,3,7,8-TCDD			15.7	19.9	pg/g	78.8 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535019	<b>Date Collected:</b> 10/06/2017 12:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 37.1
<b>Client ID:</b> VC-IRB-12-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 07:38	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 15.89 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		23.2	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		347	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin		35.5	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin		87.6	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	1	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.336	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.02	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		139	200	pg/g	69.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		170	200	pg/g	84.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		155	200	pg/g	77.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		164	200	pg/g	81.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		155	200	pg/g	77.3	(23%-140%)
13C-OCDD		297	400	pg/g	74.2	(17%-157%)
13C-2,3,7,8-TCDF		133	200	pg/g	66.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		162	200	pg/g	80.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		165	200	pg/g	82.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	200	pg/g	73.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		156	200	pg/g	77.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	200	pg/g	76.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		155	200	pg/g	77.3	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535019	<b>Date Collected:</b> 10/06/2017 12:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 37.1
<b>Client ID:</b> VC-IRB-12-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 07:38	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 15.89 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			152	200	pg/g	76.1 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			152	200	pg/g	76.0 (26%-138%)
37Cl-2,3,7,8-TCDD			13.4	20.0	pg/g	67.0 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535020	<b>Date Collected:</b> 10/06/2017 14:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 61.8
<b>Client ID:</b> VC-IRB-25		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 08:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.04 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1.05	pg/g	1.05
40321-76-4	1,2,3,7,8-PeCDD	U	5.23	pg/g	5.23
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.23	pg/g	5.23
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.23	pg/g	5.23
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.23	pg/g	5.23
35822-46-9	1,2,3,4,6,7,8-HpCDD		38.3	pg/g	5.23
3268-87-9	1,2,3,4,6,7,8,9-OCDD		600	pg/g	10.5
51207-31-9	2,3,7,8-TCDF	U	1.05	pg/g	1.05
57117-41-6	1,2,3,7,8-PeCDF	U	5.23	pg/g	5.23
57117-31-4	2,3,4,7,8-PeCDF	U	5.23	pg/g	5.23
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.23	pg/g	5.23
57117-44-9	1,2,3,6,7,8-HxCDF	U	5.23	pg/g	5.23
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.23	pg/g	5.23
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.23	pg/g	5.23
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5.23	pg/g	5.23
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.23	pg/g	5.23
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10.5	pg/g	10.5
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		2.20	pg/g	1.05
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5.23	pg/g	5.23
34465-46-8	Total Hexachlorodibenzo-p-dioxin		47.2	pg/g	5.23
37871-00-4	Total Heptachlorodibenzo-p-dioxin		134	pg/g	5.23
30402-14-3	Total Tetrachlorodibenzofuran		1.33	pg/g	1.05
30402-15-4	Total Pentachlorodibenzofuran	U	5.23	pg/g	5.23
55684-94-1	Total Hexachlorodibenzofuran	U	5.23	pg/g	5.23
38998-75-3	Total Heptachlorodibenzofuran	U	5.23	pg/g	5.23
3333-30-0	TEQ WHO2005 ND=0		0.563	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.50	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		137	209	pg/g	65.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		174	209	pg/g	83.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		153	209	pg/g	73.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	209	pg/g	77.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		156	209	pg/g	74.4	(23%-140%)
13C-OCDD		309	418	pg/g	73.8	(17%-157%)
13C-2,3,7,8-TCDF		130	209	pg/g	62.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		170	209	pg/g	81.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		171	209	pg/g	81.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	209	pg/g	69.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		153	209	pg/g	73.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		152	209	pg/g	72.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	209	pg/g	76.0	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535020	<b>Date Collected:</b> 10/06/2017 14:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 61.8
<b>Client ID:</b> VC-IRB-25		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 08:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 25.04 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			155	209	pg/g	74.1 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			153	209	pg/g	73.2 (26%-138%)
37Cl-2,3,7,8-TCDD			14.6	20.9	pg/g	69.9 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

# Quality Control Summary

**Hi-Res Dioxins/Furans**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019906	LCS for batch 36063	13C-2,3,7,8-TCDD		77.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		83.5	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		89.6	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		82.5	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		85.9	(22%-166%)
		13C-OCDD		78.1	(13%-199%)
		13C-2,3,7,8-TCDF		71.5	(22%-152%)
		13C-1,2,3,7,8-PeCDF		78.8	(21%-192%)
		13C-2,3,4,7,8-PeCDF		80.7	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		83.5	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		78.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		81.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.7	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		78.6	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		82.3	(20%-186%)
		37Cl-2,3,7,8-TCDD		78.5	(31%-191%)
12019907	LCSD for batch 36063	13C-2,3,7,8-TCDD		80.2	(20%-175%)
		13C-1,2,3,7,8-PeCDD		86.6	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		94.9	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		87.8	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		90.5	(22%-166%)
		13C-OCDD		81.9	(13%-199%)
		13C-2,3,7,8-TCDF		76.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		82.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		85.9	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		89.0	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		81.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		87.1	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		85.7	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		84.3	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		83.5	(20%-186%)
		37Cl-2,3,7,8-TCDD		83.7	(31%-191%)
12019905	MB for batch 36063	13C-2,3,7,8-TCDD		74.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		89.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.9	(23%-140%)
		13C-OCDD		78.4	(17%-157%)
		13C-2,3,7,8-TCDF		69.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		73.5	(35%-197%)
11535001	VC-IRB-01	13C-2,3,7,8-TCDD		65.5	(25%-164%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535001	VC-IRB-01	13C-1,2,3,7,8-PeCDD		74.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		74.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		77.0	(23%-140%)
		13C-OCDD		70.6	(17%-157%)
		13C-2,3,7,8-TCDF		59.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		73.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		73.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		72.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		71.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.1	(35%-197%)
11535002	VC-IRB-02	13C-2,3,7,8-TCDD		70.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		79.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.6	(23%-140%)
		13C-OCDD		78.1	(17%-157%)
		13C-2,3,7,8-TCDF		68.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		78.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		79.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		78.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.6	(26%-138%)
37Cl-2,3,7,8-TCDD		83.1	(35%-197%)		
11535003	VC-IRB-03-S1	13C-2,3,7,8-TCDD		78.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		89.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.4	(23%-140%)
		13C-OCDD		78.9	(17%-157%)
		13C-2,3,7,8-TCDF		73.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		88.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		80.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		79.4	(26%-138%)
37Cl-2,3,7,8-TCDD		86.2	(35%-197%)		
11535004	VC-IRB-03-S2	13C-2,3,7,8-TCDD		74.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		84.0	(25%-181%)



**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535004	VC-IRB-03-S2	13C-1,2,3,4,7,8-HxCDD		82.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		81.8	(23%-140%)
		13C-OCDD		77.2	(17%-157%)
		13C-2,3,7,8-TCDF		68.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		81.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		75.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		79.2	(35%-197%)
		11535005	VC-IRB-04	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				88.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				84.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				81.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				85.0	(23%-140%)
13C-OCDD				81.3	(17%-157%)
13C-2,3,7,8-TCDF				74.1	(24%-169%)
13C-1,2,3,7,8-PeCDF				88.3	(24%-185%)
13C-2,3,4,7,8-PeCDF				88.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				79.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				81.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				82.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				83.8	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				80.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				81.0	(26%-138%)
37Cl-2,3,7,8-TCDD		83.2	(35%-197%)		
11535006	VC-IRB-05-S1	13C-2,3,7,8-TCDD		81.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		94.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		88.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		87.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.4	(23%-140%)
		13C-OCDD		92.3	(17%-157%)
		13C-2,3,7,8-TCDF		78.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		93.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		93.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		85.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		85.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		86.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		86.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.4	(26%-138%)
37Cl-2,3,7,8-TCDD		84.4	(35%-197%)		
11535007	VC-IRB-05-S2	13C-2,3,7,8-TCDD		86.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		103	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		95.3	(32%-141%)

**Hi-Res Dioxins/Furans**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535007	VC-IRB-05-S2	13C-1,2,3,6,7,8-HxCDD		96.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.0	(23%-140%)
		13C-OCDD		84.4	(17%-157%)
		13C-2,3,7,8-TCDF		83.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		99.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		106	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		92.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		90.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		90.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		98.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		90.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		90.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		86.5	(35%-197%)
		11535008	VC-IRB-06	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				68.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				67.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				72.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				72.3	(23%-140%)
13C-OCDD				68.0	(17%-157%)
13C-2,3,7,8-TCDF				52.9	(24%-169%)
13C-1,2,3,7,8-PeCDF				66.1	(24%-185%)
13C-2,3,4,7,8-PeCDF				66.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				69.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				68.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				65.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				68.0	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				71.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		67.6	(26%-138%)		
37Cl-2,3,7,8-TCDD		75.9	(35%-197%)		
11535009	VC-IRB-07-ALT-S1	13C-2,3,7,8-TCDD		77.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		91.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		89.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.2	(23%-140%)
		13C-OCDD		81.6	(17%-157%)
		13C-2,3,7,8-TCDF		74.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		91.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		85.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		85.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		81.7	(26%-138%)		
37Cl-2,3,7,8-TCDD		80.8	(35%-197%)		
11535010	VC-IRB-07-ALT-S2	13C-2,3,7,8-TCDD		74.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.8	(28%-130%)

**Hi-Res Dioxins/Furans**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535010	VC-IRB-07-ALT-S2	13C-1,2,3,4,6,7,8-HpCDD		81.9	(23%-140%)
		13C-OCDD		75.9	(17%-157%)
		13C-2,3,7,8-TCDF		72.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		86.7	(24%-185%)
		13C-2,3,4,7,8-PeCDF		90.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		86.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		75.0	(35%-197%)
		11535011	VC-IRB-08-ALT-S1	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				91.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				82.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				90.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				86.8	(23%-140%)
13C-OCDD				85.8	(17%-157%)
13C-2,3,7,8-TCDF				70.9	(24%-169%)
13C-1,2,3,7,8-PeCDF				88.7	(24%-185%)
13C-2,3,4,7,8-PeCDF				91.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				83.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				85.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				83.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				85.5	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		83.6	(28%-143%)		
13C-1,2,3,4,7,8,9-HpCDF		79.8	(26%-138%)		
37Cl-2,3,7,8-TCDD		79.0	(35%-197%)		
11535012	VC-IRB-08-ALT-S2	13C-2,3,7,8-TCDD		72.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		84.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		75.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		79.5	(23%-140%)
		13C-OCDD		72.4	(17%-157%)
		13C-2,3,7,8-TCDF		66.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		85.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.3	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		79.2	(28%-143%)		
13C-1,2,3,4,7,8,9-HpCDF		75.2	(26%-138%)		
37Cl-2,3,7,8-TCDD		82.0	(35%-197%)		
11535013	VC-IRB-08-ALT-S3	13C-2,3,7,8-TCDD		79.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		93.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		90.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.0	(23%-140%)

**Hi-Res Dioxins/Furans**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535013	VC-IRB-08-ALT-S3	13C-OCDD		83.6	(17%-157%)
		13C-2,3,7,8-TCDF		74.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		91.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		80.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		84.5	(35%-197%)
11535014	VC-IRB-09-ALT	13C-2,3,7,8-TCDD		76.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		91.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		87.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.4	(23%-140%)
		13C-OCDD		80.7	(17%-157%)
		13C-2,3,7,8-TCDF		71.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		89.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		84.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		84.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		79.0	(26%-138%)		
37Cl-2,3,7,8-TCDD		80.3	(35%-197%)		
11535015	VC-IRB-10	13C-2,3,7,8-TCDD		80.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		89.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		87.6	(23%-140%)
		13C-OCDD		84.6	(17%-157%)
		13C-2,3,7,8-TCDF		74.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		93.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		86.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		81.9	(26%-138%)		
37Cl-2,3,7,8-TCDD		84.8	(35%-197%)		
11535016	VC-IRB-10 MS	13C-2,3,7,8-TCDD		79.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		91.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		88.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.1	(23%-140%)
		13C-OCDD		81.7	(17%-157%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535016	VC-IRB-10 MS	13C-2,3,7,8-TCDF		75.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		88.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		91.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		83.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		78.4	(35%-197%)
11535017	VC-IRB-10 MSD	13C-2,3,7,8-TCDD		82.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		97.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		90.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.9	(23%-140%)
		13C-OCDD		89.3	(17%-157%)
		13C-2,3,7,8-TCDF		76.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		96.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		96.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		86.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		87.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		90.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		90.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		87.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		85.7	(35%-197%)
11535018	VC-IRB-12-S1	13C-2,3,7,8-TCDD		70.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		78.0	(23%-140%)
		13C-OCDD		71.4	(17%-157%)
		13C-2,3,7,8-TCDF		65.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.8	(26%-138%)
37Cl-2,3,7,8-TCDD		78.8	(35%-197%)		
11535019	VC-IRB-12-S2	13C-2,3,7,8-TCDD		69.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		84.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		77.3	(23%-140%)
		13C-OCDD		74.2	(17%-157%)
		13C-2,3,7,8-TCDF		66.4	(24%-169%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535019	VC-IRB-12-S2	13C-1,2,3,7,8-PeCDF		80.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		82.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		76.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		67.0	(35%-197%)
11535020	VC-IRB-25	13C-2,3,7,8-TCDD		65.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		83.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		73.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		74.4	(23%-140%)
		13C-OCDD		73.8	(17%-157%)
		13C-2,3,7,8-TCDF		62.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		69.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		73.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		69.9	(35%-197%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

Hi-Res Dioxins/Furans  
Quality Control Summary  
Spike Recovery Report

SDG Number: L1736278  
Client ID: VC-IRB-10 MS  
Lab Sample ID: 11535016  
Instrument: HRP750  
Analyst: MJC

Sample Type: Matrix Spike  
Matrix: SOIL  
%Moisture: 42.8  
Analysis Date: 11/04/2017 05:17  
Dilution: 1  
Prep Batch ID:  
Batch ID: 36065

CAS No.	Parmname	Amount Added		Spike Conc.	Recovery %	Acceptance Limits
		pg/g	U	pg/g		
1746-01-6	MS 2,3,7,8-TCDD	19.9	U	21.0	105	70-130
40321-76-4	MS 1,2,3,7,8-PeCDD	99.7	U	105	105	70-130
39227-28-6	MS 1,2,3,4,7,8-HxCDD	99.7	U	101	101	70-130
57653-85-7	MS 1,2,3,6,7,8-HxCDD	99.7	U	103	104	70-130
19408-74-3	MS 1,2,3,7,8,9-HxCDD	99.7	U	101	102	70-130
35822-46-9	MS 1,2,3,4,6,7,8-HpCDD	99.7		128	94.8	70-130
3268-87-9	MS 1,2,3,4,6,7,8,9-OCDD	199		589	17.8 *	70-130
51207-31-9	MS 2,3,7,8-TCDF	19.9	U	19.2	96.3	70-130
57117-41-6	MS 1,2,3,7,8-PeCDF	99.7	U	101	101	70-130
57117-31-4	MS 2,3,4,7,8-PeCDF	99.7	U	103	104	70-130
70648-26-9	MS 1,2,3,4,7,8-HxCDF	99.7	U	101	101	70-130
57117-44-9	MS 1,2,3,6,7,8-HxCDF	99.7	U	109	109	70-130
60851-34-5	MS 2,3,4,6,7,8-HxCDF	99.7	U	104	104	70-130
72918-21-9	MS 1,2,3,7,8,9-HxCDF	99.7	U	101	101	70-130
67562-39-4	MS 1,2,3,4,6,7,8-HpCDF	99.7	U	99.0	99.3	70-130
55673-89-7	MS 1,2,3,4,7,8,9-HpCDF	99.7	U	102	102	70-130
39001-02-0	MS 1,2,3,4,6,7,8,9-OCDF	199	U	210	105	70-130

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

<b>SDG Number:</b> L1736278	<b>Sample Type:</b> Matrix Spike Duplicate
<b>Client ID:</b> VC-IRB-10 MSD	<b>Matrix:</b> SOIL
<b>Lab Sample ID:</b> 11535017	<b>%Moisture:</b> 42.8
<b>Instrument:</b> HRP750	<b>Analysis Date:</b> 11/04/2017 06:04
<b>Analyst:</b> MJC	<b>Dilution:</b> 1
	<b>Prep Batch ID:</b>
	<b>Batch ID:</b> 36065

CAS No.	Parmname	Amount Added		Spike Conc.	Recovery %	Acceptance Limits	RPD %	Acceptance Limits	
		pg/g	U						
1746-01-6	MSD	2,3,7,8-TCDD	19.9	U	21.9	110	70-130	4.16	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	99.7	U	105	106	70-130	0.481	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	99.7	U	105	105	70-130	4.00	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	99.7	U	105	106	70-130	1.63	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	99.7	U	107	108	70-130	5.77	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	99.7		150	117	70-130	15.9	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	199		894	171 *	70-130	41.2 *	0-20
51207-31-9	MSD	2,3,7,8-TCDF	19.9	U	20.2	101	70-130	4.83	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	99.7	U	104	104	70-130	3.30	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	99.7	U	109	109	70-130	4.95	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	99.7	U	109	109	70-130	7.29	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	99.7	U	112	113	70-130	2.93	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	99.7	U	105	105	70-130	1.12	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	99.7	U	107	107	70-130	5.80	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	99.7	U	102	102	70-130	2.51	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	99.7	U	108	108	70-130	5.90	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	199	U	213	107	70-130	1.79	0-20



**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1736278  
**Client ID:** LCS for batch 36063  
**Lab Sample ID:** 12019906  
**Instrument:** HRP750  
**Analyst:** MJC

**Sample Type:** Laboratory Control Sample  
**Matrix:** SOIL  
**Analysis Date:** 11/03/2017 13:30  
**Prep Batch ID:** 36063  
**Batch ID:** 36065  
**Dilution:** 1

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	20.0	20.8	104	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	100	106	106	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	100	102	102	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	100	103	103	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	100	103	103	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	100	105	105	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	200	207	103	78-144
51207-31-9	LCS 2,3,7,8-TCDF	20.0	19.4	96.8	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	100	104	104	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	100	104	104	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	100	106	106	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	100	104	104	84-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	100	105	105	70-156
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	100	102	102	78-130
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	100	105	105	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	100	100	100	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	200	201	100	63-170

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1736278      **Sample Type:** Laboratory Control Sample Duplicate  
**Client ID:** LCSD for batch 36063      **Matrix:** SOIL  
**Lab Sample ID:** 12019907  
**Instrument:** HRP750      **Analysis Date:** 11/03/2017 14:17      **Dilution:** 1  
**Analyst:** MJC      **Prep Batch ID:** 36063  
**Batch ID:** 36065

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	20.0	20.9	104	67-158	0.442	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	100	108	108	70-142	2.09	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	100	102	102	70-164	0.0668	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	100	103	103	76-134	0.726	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	100	102	102	64-162	0.553	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	100	102	102	70-140	2.34	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	200	207	104	78-144	0.356	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	20.0	19.1	95.7	75-158	1.18	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	100	103	103	80-134	0.975	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	100	103	103	68-160	0.392	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	100	104	104	72-134	2.12	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	100	108	108	84-130	4.19	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HxCDF	100	103	103	70-156	1.68	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	100	102	102	78-130	0.286	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	100	103	103	82-122	1.59	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	100	104	104	78-138	4.07	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	200	203	101	63-170	1.09	0-20

## Method Blank Summary

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SDG Number: L1736278  
 Client ID: MB for batch 36063  
 Lab Sample ID: 12019905  
 Column:

Client: ALPH001  
 Instrument ID: HRP750  
 Prep Date: 01-NOV-17

Matrix: SOIL  
 Data File: A03NOV17B-4  
 Analyzed: 11/03/17 15:04

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 36063	12019906	A03NOV17B-2	11/03/17	1330
02 LCSD for batch 36063	12019907	A03NOV17B-3	11/03/17	1417
03 VC-IRB-01	11535001	A03NOV17B-5	11/03/17	1551
04 VC-IRB-02	11535002	A03NOV17B-6	11/03/17	1638
05 VC-IRB-03-S1	11535003	A03NOV17B-7	11/03/17	1725
06 VC-IRB-03-S2	11535004	A03NOV17B-8	11/03/17	1812
07 VC-IRB-04	11535005	A03NOV17B-9	11/03/17	1859
08 VC-IRB-05-S1	11535006	A03NOV17B-10	11/03/17	1946
09 VC-IRB-05-S2	11535007	A03NOV17B-11	11/03/17	2033
10 VC-IRB-06	11535008	A03NOV17B-12	11/03/17	2120
11 VC-IRB-07-ALT-S1	11535009	A03NOV17B-13	11/03/17	2207
12 VC-IRB-07-ALT-S2	11535010	A03NOV17B-14	11/03/17	2254
13 VC-IRB-08-ALT-S1	11535011	A03NOV17B_2-2	11/04/17	0122
14 VC-IRB-08-ALT-S2	11535012	A03NOV17B_2-3	11/04/17	0209
15 VC-IRB-08-ALT-S3	11535013	A03NOV17B_2-4	11/04/17	0256
16 VC-IRB-09-ALT	11535014	A03NOV17B_2-5	11/04/17	0343
17 VC-IRB-10	11535015	A03NOV17B_2-6	11/04/17	0430
18 VC-IRB-10 MS	11535016	A03NOV17B_2-7	11/04/17	0517
19 VC-IRB-10 MSD	11535017	A03NOV17B_2-8	11/04/17	0604
20 VC-IRB-12-S1	11535018	A03NOV17B_2-9	11/04/17	0651
21 VC-IRB-12-S2	11535019	A03NOV17B_2-10	11/04/17	0738
22 VC-IRB-25	11535020	A03NOV17B_2-11	11/04/17	0825
23 VC-IRB-02	11535002	b07nov17a_2-8	11/07/17	1742
24 VC-IRB-08-ALT-S1	11535011	b07nov17a_2-9	11/07/17	1802
25 VC-IRB-05-S1	11535006	A09NOV17A-8	11/09/17	1244

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535016	<b>Date Collected:</b> 10/07/2017 17:05	<b>Matrix:</b> SOIL
<b>Client Sample:</b> MS for 11535015 (VC-IRB-10)	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 42.8
<b>Client ID:</b> VC-IRB-10 MS		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 05:17	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 17.54 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		21.0	pg/g	0.997
40321-76-4	1,2,3,7,8-PeCDD		105	pg/g	4.99
39227-28-6	1,2,3,4,7,8-HxCDD		101	pg/g	4.99
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	4.99
19408-74-3	1,2,3,7,8,9-HxCDD		101	pg/g	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD		128	pg/g	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		589	pg/g	9.97
51207-31-9	2,3,7,8-TCDF		19.2	pg/g	0.997
57117-41-6	1,2,3,7,8-PeCDF		101	pg/g	4.99
57117-31-4	2,3,4,7,8-PeCDF		103	pg/g	4.99
70648-26-9	1,2,3,4,7,8-HxCDF		101	pg/g	4.99
57117-44-9	1,2,3,6,7,8-HxCDF		109	pg/g	4.99
60851-34-5	2,3,4,6,7,8-HxCDF		104	pg/g	4.99
72918-21-9	1,2,3,7,8,9-HxCDF		101	pg/g	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF		99.0	pg/g	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF		102	pg/g	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF		210	pg/g	9.97

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		158	199	pg/g	79.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		182	199	pg/g	91.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		168	199	pg/g	84.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		177	199	pg/g	88.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		170	199	pg/g	85.1	(23%-140%)
13C-OCDD		326	399	pg/g	81.7	(17%-157%)
13C-2,3,7,8-TCDF		151	199	pg/g	75.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		176	199	pg/g	88.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		182	199	pg/g	91.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		159	199	pg/g	79.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		166	199	pg/g	83.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		165	199	pg/g	82.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		163	199	pg/g	81.6	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		163	199	pg/g	81.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	199	pg/g	81.3	(26%-138%)
37Cl-2,3,7,8-TCDD		15.6	19.9	pg/g	78.4	(35%-197%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535017	<b>Date Collected:</b> 10/07/2017 17:05	<b>Matrix:</b> SOIL
<b>Client Sample:</b> MSD for 11535015 (VC-IRB-10)	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 42.8
<b>Client ID:</b> VC-IRB-10 MSD		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 06:04	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 17.55 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		21.9	pg/g	0.997
40321-76-4	1,2,3,7,8-PeCDD		105	pg/g	4.98
39227-28-6	1,2,3,4,7,8-HxCDD		105	pg/g	4.98
57653-85-7	1,2,3,6,7,8-HxCDD		105	pg/g	4.98
19408-74-3	1,2,3,7,8,9-HxCDD		107	pg/g	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD		150	pg/g	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD		894	pg/g	9.97
51207-31-9	2,3,7,8-TCDF		20.2	pg/g	0.997
57117-41-6	1,2,3,7,8-PeCDF		104	pg/g	4.98
57117-31-4	2,3,4,7,8-PeCDF		109	pg/g	4.98
70648-26-9	1,2,3,4,7,8-HxCDF		109	pg/g	4.98
57117-44-9	1,2,3,6,7,8-HxCDF		112	pg/g	4.98
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	4.98
72918-21-9	1,2,3,7,8,9-HxCDF		107	pg/g	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF		102	pg/g	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF		108	pg/g	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF		213	pg/g	9.97

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		165	199	pg/g	82.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		195	199	pg/g	97.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		175	199	pg/g	87.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		180	199	pg/g	90.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		183	199	pg/g	91.9	(23%-140%)
13C-OCDD		356	399	pg/g	89.3	(17%-157%)
13C-2,3,7,8-TCDF		153	199	pg/g	76.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		191	199	pg/g	96.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		192	199	pg/g	96.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		163	199	pg/g	81.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		172	199	pg/g	86.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		175	199	pg/g	87.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		180	199	pg/g	90.1	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		181	199	pg/g	90.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		174	199	pg/g	87.1	(26%-138%)
37Cl-2,3,7,8-TCDD		17.1	19.9	pg/g	85.7	(35%-197%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019905		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36063		
<b>Client ID:</b> MB for batch 36063		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 15:04	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	5	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	10	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	5	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	5	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	1	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.70	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	200	pg/g	74.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		172	200	pg/g	86.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		180	200	pg/g	89.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		169	200	pg/g	84.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		174	200	pg/g	86.9	(23%-140%)
13C-OCDD		314	400	pg/g	78.4	(17%-157%)
13C-2,3,7,8-TCDF		140	200	pg/g	69.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		163	200	pg/g	81.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		170	200	pg/g	84.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		169	200	pg/g	84.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		165	200	pg/g	82.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		167	200	pg/g	83.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		166	200	pg/g	83.0	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019905		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36063		
<b>Client ID:</b> MB for batch 36063		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 15:04	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			166	200	pg/g	82.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			163	200	pg/g	81.3 (26%-138%)
37Cl-2,3,7,8-TCDD			14.7	20.0	pg/g	73.5 (35%-197%)

**Comments:**  
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019906		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36063		
<b>Client ID:</b> LCS for batch 36063		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 13:30	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		20.8	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		106	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		103	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		105	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		207	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		19.4	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		104	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		104	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		106	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		104	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		102	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		105	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		100	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		201	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		154	200	pg/g	77.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		167	200	pg/g	83.5	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		179	200	pg/g	89.6	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		165	200	pg/g	82.5	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		172	200	pg/g	85.9	(22%-166%)
13C-OCDD		312	400	pg/g	78.1	(13%-199%)
13C-2,3,7,8-TCDF		143	200	pg/g	71.5	(22%-152%)
13C-1,2,3,7,8-PeCDF		158	200	pg/g	78.8	(21%-192%)
13C-2,3,4,7,8-PeCDF		161	200	pg/g	80.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		167	200	pg/g	83.5	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		157	200	pg/g	78.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		163	200	pg/g	81.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		161	200	pg/g	80.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		157	200	pg/g	78.6	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		165	200	pg/g	82.3	(20%-186%)
37Cl-2,3,7,8-TCDD		15.7	20.0	pg/g	78.5	(31%-191%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019907		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36063		
<b>Client ID:</b> LCSD for batch 36063		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 14:17	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		20.9	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		108	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		102	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		102	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		207	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		19.1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		103	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		104	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		108	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		103	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		102	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		103	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		104	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		203	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		160	200	pg/g	80.2	(20%-175%)
13C-1,2,3,7,8-PeCDD		173	200	pg/g	86.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		190	200	pg/g	94.9	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		176	200	pg/g	87.8	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		181	200	pg/g	90.5	(22%-166%)
13C-OCDD		328	400	pg/g	81.9	(13%-199%)
13C-2,3,7,8-TCDF		152	200	pg/g	76.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		164	200	pg/g	82.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		172	200	pg/g	85.9	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		178	200	pg/g	89.0	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		164	200	pg/g	81.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		174	200	pg/g	87.1	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		171	200	pg/g	85.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		169	200	pg/g	84.3	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		167	200	pg/g	83.5	(20%-186%)
37Cl-2,3,7,8-TCDD		16.7	20.0	pg/g	83.7	(31%-191%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

# **PCB Congeners Analysis**

# Case Narrative

**PCBC Case Narrative**  
**Alpha Analytical Laboratory (ALPH)**  
**SDG L1736278**  
**Work Order 11535**

**Method/Analysis Information**

**Product:** PCB Congeners by EPA Method 1668A in Solids  
**Analytical Method:** EPA Method 1668A  
**Extraction Method:** SW846 3540C  
**Analytical Batch Number:** 36009  
**Clean Up Batch Number:** 36008  
**Extraction Batch Number:** 36007

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

<b>Sample ID</b>	<b>Client ID</b>
11535001	VC-IRB-01
11535002	VC-IRB-02
11535003	VC-IRB-03-S1
11535004	VC-IRB-03-S2
11535005	VC-IRB-04
11535006	VC-IRB-05-S1
11535007	VC-IRB-05-S2
11535008	VC-IRB-06
11535009	VC-IRB-07-ALT-S1
11535010	VC-IRB-07-ALT-S2
11535011	VC-IRB-08-ALT-S1
11535012	VC-IRB-08-ALT-S2
11535013	VC-IRB-08-ALT-S3
11535014	VC-IRB-09-ALT
11535015	VC-IRB-10
11535016	11535015(VC-IRB-10) Matrix Spike (MS)
11535017	11535015(VC-IRB-10) Matrix Spike Duplicate (MSD)
11535018	VC-IRB-12-S1
11535019	VC-IRB-12-S2
11535020	VC-IRB-25
12019858	Method Blank (MB)

12019859                    Laboratory Control Sample (LCS)  
12019860                    Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

### **SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

### **Calibration Information**

#### **Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

#### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

### **Quality Control (QC) Information**

#### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Surrogate Recoveries**

One surrogate recovered outside the acceptance limits. 11535007 (VC-IRB-05-S2), 11535009 (VC-IRB-07-ALT-S1), 11535012 (VC-IRB-08-ALT-S2).

Two surrogates recovered outside the acceptance limits. and 11535014 (VC-IRB-09-ALT).

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

#### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

#### **QC Sample Designation**

Sample 11535015 (VC-IRB-10) was selected for analysis as the matrix spike and matrix spike duplicate.

#### **Matrix Spike (MS) Recovery Statement**

The MS recoveries were within the established acceptance limits.

#### **Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD recoveries were within the established acceptance limits.

#### **MS/MSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the MS and MSD met the acceptance limits.

### **Technical Information**

#### **Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

#### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

#### **Sample Dilutions**

The samples in this SDG did not require dilutions.

#### **Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

### **Miscellaneous Information**

#### **Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

#### **Manual Integrations**

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

### **System Configuration**

This analysis was performed on the following instrument configuration:

<b>Instrument ID</b>	<b>Instrument</b>	<b>System Configuration</b>	<b>Column ID</b>	<b>Column Description</b>
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary



## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Qualifier Definition Report for

ALPH001 Alpha Analytical Laboratory

Client SDG: L1736278 CFA Work Order: 11535

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535001  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-01  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 20:02  
**Data File:** c27oct17a-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 18:20  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 49.2  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2.62	pg/g	2.62
2051-61-8	2-MoCB		2.78	pg/g	2.62
2051-62-9	3-MoCB	U	2.62	pg/g	2.62
13029-08-8	4-DiCB		3.44	pg/g	2.62
16605-91-7	5-DiCB	U	2.62	pg/g	2.62
25569-80-6	6-DiCB	U	2.62	pg/g	2.62
33284-50-3	7-DiCB	U	2.62	pg/g	2.62
34883-43-7	8-DiCB	U	2.62	pg/g	2.62
34883-39-1	9-DiCB	U	2.62	pg/g	2.62
33146-45-1	10-DiCB	U	2.62	pg/g	2.62
2050-67-1	11-DiCB	U	26.2	pg/g	26.2
2974-92-7	12-DiCB	CU	5.25	pg/g	5.25
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2.62	pg/g	2.62
2050-68-2	15-DiCB	U	2.62	pg/g	2.62
38444-78-9	16-TrCB	U	2.62	pg/g	2.62
37680-66-3	17-TrCB	U	2.62	pg/g	2.62
37680-65-2	18-TrCB	CU	5.25	pg/g	5.25
38444-73-4	19-TrCB	U	2.62	pg/g	2.62
38444-84-7	20-TrCB	CU	5.25	pg/g	5.25
55702-46-0	21-TrCB	CU	5.25	pg/g	5.25
38444-85-8	22-TrCB	U	2.62	pg/g	2.62
55720-44-0	23-TrCB	U	2.62	pg/g	2.62
55702-45-9	24-TrCB	U	2.62	pg/g	2.62
55712-37-3	25-TrCB	U	2.62	pg/g	2.62
38444-81-4	26-TrCB	CU	5.25	pg/g	5.25
38444-76-7	27-TrCB	U	2.62	pg/g	2.62
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2.62	pg/g	2.62
38444-77-8	32-TrCB	U	2.62	pg/g	2.62

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 2 of 8

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535001	<b>Date Collected:</b> 10/07/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 49.2
<b>Client ID:</b> VC-IRB-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 20:02	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.01 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2.62	pg/g	2.62
37680-69-6	35-TrCB	U	2.62	pg/g	2.62
38444-87-0	36-TrCB	U	2.62	pg/g	2.62
38444-90-5	37-TrCB	U	2.62	pg/g	2.62
53555-66-1	38-TrCB	U	2.62	pg/g	2.62
38444-88-1	39-TrCB	U	2.62	pg/g	2.62
38444-93-8	40-TeCB	CU	5.25	pg/g	5.25
52663-59-9	41-TeCB	U	2.62	pg/g	2.62
36559-22-5	42-TeCB	U	2.62	pg/g	2.62
70362-46-8	43-TeCB	U	2.62	pg/g	2.62
41464-39-5	44-TeCB	CU	7.87	pg/g	7.87
70362-45-7	45-TeCB	CU	5.25	pg/g	5.25
41464-47-5	46-TeCB	U	2.62	pg/g	2.62
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2.62	pg/g	2.62
41464-40-8	49-TeCB	CU	5.25	pg/g	5.25
62796-65-0	50-TeCB	CU	5.25	pg/g	5.25
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2.62	pg/g	2.62
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2.62	pg/g	2.62
74338-24-2	55-TeCB	U	2.62	pg/g	2.62
41464-43-1	56-TeCB	U	2.62	pg/g	2.62
70424-67-8	57-TeCB	U	2.62	pg/g	2.62
41464-49-7	58-TeCB	U	2.62	pg/g	2.62
74472-33-6	59-TeCB	CU	7.87	pg/g	7.87
33025-41-1	60-TeCB	U	2.62	pg/g	2.62
33284-53-6	61-TeCB	CU	10.5	pg/g	10.5
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2.62	pg/g	2.62
52663-58-8	64-TeCB	U	2.62	pg/g	2.62

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535001	<b>Date Collected:</b> 10/07/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 49.2
<b>Client ID:</b> VC-IRB-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 20:02	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.01 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2.62	pg/g	2.62
73575-53-8	67-TeCB	U	2.62	pg/g	2.62
73575-52-7	68-TeCB	U	2.62	pg/g	2.62
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2.62	pg/g	2.62
74338-23-1	73-TeCB	U	2.62	pg/g	2.62
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2.62	pg/g	2.62
70362-49-1	78-TeCB	U	2.62	pg/g	2.62
41464-48-6	79-TeCB	U	2.62	pg/g	2.62
33284-52-5	80-TeCB	U	2.62	pg/g	2.62
70362-50-4	81-TeCB	U	2.62	pg/g	2.62
52663-62-4	82-PeCB	U	2.62	pg/g	2.62
60145-20-2	83-PeCB	U	2.62	pg/g	2.62
52663-60-2	84-PeCB	U	2.62	pg/g	2.62
65510-45-4	85-PeCB	CU	7.87	pg/g	7.87
55312-69-1	86-PeCB	CU	15.7	pg/g	15.7
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	5.25	pg/g	5.25
73575-57-2	89-PeCB	U	2.62	pg/g	2.62
68194-07-0	90-PeCB	CU	7.87	pg/g	7.87
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2.62	pg/g	2.62
73575-56-1	93-PeCB	CU	5.25	pg/g	5.25
73575-55-0	94-PeCB	U	2.62	pg/g	2.62
38379-99-6	95-PeCB	U	2.62	pg/g	2.62
73575-54-9	96-PeCB	U	2.62	pg/g	2.62

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535001  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-01  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 20:02  
**Data File:** c27oct17a-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 18:20  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 49.2  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	5.25	pg/g	5.25
38380-01-7	99-PeCB	U	2.62	pg/g	2.62
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2.62	pg/g	2.62
56558-16-8	104-PeCB	U	2.62	pg/g	2.62
32598-14-4	105-PeCB	U	2.62	pg/g	2.62
70424-69-0	106-PeCB	U	2.62	pg/g	2.62
70424-68-9	107-PeCB	U	2.62	pg/g	2.62
70362-41-3	108-PeCB	CU	5.25	pg/g	5.25
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	5.25	pg/g	5.25
39635-32-0	111-PeCB	U	2.62	pg/g	2.62
74472-36-9	112-PeCB	U	2.62	pg/g	2.62
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2.62	pg/g	2.62
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2.62	pg/g	2.62
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2.62	pg/g	2.62
56558-18-0	121-PeCB	U	2.62	pg/g	2.62
76842-07-4	122-PeCB	U	2.62	pg/g	2.62
65510-44-3	123-PeCB	U	2.62	pg/g	2.62
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2.62	pg/g	2.62
39635-33-1	127-PeCB	U	2.62	pg/g	2.62
38380-07-3	128-HxCB	CU	5.25	pg/g	5.25

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535001  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-01  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 20:02  
**Data File:** c27oct17a-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 18:20  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 49.2  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	7.87	pg/g	7.87
52663-66-8	130-HxCB	U	2.62	pg/g	2.62
61798-70-7	131-HxCB	U	2.62	pg/g	2.62
38380-05-1	132-HxCB	U	2.62	pg/g	2.62
35694-04-3	133-HxCB	U	2.62	pg/g	2.62
52704-70-8	134-HxCB	U	2.62	pg/g	2.62
52744-13-5	135-HxCB	CU	5.25	pg/g	5.25
38411-22-2	136-HxCB	U	2.62	pg/g	2.62
35694-06-5	137-HxCB	U	2.62	pg/g	2.62
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	5.25	pg/g	5.25
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2.62	pg/g	2.62
41411-61-4	142-HxCB	U	2.62	pg/g	2.62
68194-15-0	143-HxCB	U	2.62	pg/g	2.62
68194-14-9	144-HxCB	U	2.62	pg/g	2.62
74472-40-5	145-HxCB	U	2.62	pg/g	2.62
51908-16-8	146-HxCB	U	2.62	pg/g	2.62
68194-13-8	147-HxCB	CU	5.25	pg/g	5.25
74472-41-6	148-HxCB	U	2.62	pg/g	2.62
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2.62	pg/g	2.62
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2.62	pg/g	2.62
35065-27-1	153-HxCB	CU	5.25	pg/g	5.25
60145-22-4	154-HxCB	U	2.62	pg/g	2.62
33979-03-2	155-HxCB	U	2.62	pg/g	2.62
38380-08-4	156-HxCB	CU	5.25	pg/g	5.25
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2.62	pg/g	2.62
39635-35-3	159-HxCB	U	2.62	pg/g	2.62
41411-62-5	160-HxCB	U	2.62	pg/g	2.62

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 6 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535001  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-01  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 20:02  
**Data File:** c27oct17a-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 18:20  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 49.2  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2.62	pg/g	2.62
39635-34-2	162-HxCB	U	2.62	pg/g	2.62
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2.62	pg/g	2.62
74472-46-1	165-HxCB	U	2.62	pg/g	2.62
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2.62	pg/g	2.62
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2.62	pg/g	2.62
35065-30-6	170-HpCB	U	2.62	pg/g	2.62
52663-71-5	171-HpCB	CU	5.25	pg/g	5.25
52663-74-8	172-HpCB	U	2.62	pg/g	2.62
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2.62	pg/g	2.62
40186-70-7	175-HpCB	U	2.62	pg/g	2.62
52663-65-7	176-HpCB	U	2.62	pg/g	2.62
52663-70-4	177-HpCB	U	2.62	pg/g	2.62
52663-67-9	178-HpCB	U	2.62	pg/g	2.62
52663-64-6	179-HpCB	U	2.62	pg/g	2.62
35065-29-3	180-HpCB	CU	5.25	pg/g	5.25
74472-47-2	181-HpCB	U	2.62	pg/g	2.62
60145-23-5	182-HpCB	U	2.62	pg/g	2.62
52663-69-1	183-HpCB	CU	5.25	pg/g	5.25
74472-48-3	184-HpCB	U	2.62	pg/g	2.62
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2.62	pg/g	2.62
52663-68-0	187-HpCB	U	2.62	pg/g	2.62
74487-85-7	188-HpCB	U	2.62	pg/g	2.62
39635-31-9	189-HpCB	U	2.62	pg/g	2.62
41411-64-7	190-HpCB	U	2.62	pg/g	2.62
74472-50-7	191-HpCB	U	2.62	pg/g	2.62
74472-51-8	192-HpCB	U	2.62	pg/g	2.62

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535001	<b>Date Collected:</b> 10/07/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 49.2
<b>Client ID:</b> VC-IRB-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 20:02	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.01 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2.62	pg/g	2.62
52663-78-2	195-OcCB	U	2.62	pg/g	2.62
42740-50-1	196-OcCB	U	2.62	pg/g	2.62
33091-17-7	197-OcCB	CU	5.25	pg/g	5.25
68194-17-2	198-OcCB	CU	5.25	pg/g	5.25
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2.62	pg/g	2.62
2136-99-4	202-OcCB	U	2.62	pg/g	2.62
52663-76-0	203-OcCB	U	2.62	pg/g	2.62
74472-52-9	204-OcCB	U	2.62	pg/g	2.62
74472-53-0	205-OcCB	U	2.62	pg/g	2.62
40186-72-9	206-NoCB	U	2.62	pg/g	2.62
52663-79-3	207-NoCB	U	2.62	pg/g	2.62
52663-77-1	208-NoCB	U	2.62	pg/g	2.62
2051-24-3	209-DeCB	U	2.62	pg/g	2.62
1336-36-3	Total PCB Congeners		6.22	pg/g	2.62

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		105	262	pg/g	40.2	(15%-150%)
13C-3-MoCB		120	262	pg/g	45.7	(15%-150%)
13C-4-DiCB		127	262	pg/g	48.5	(25%-150%)
13C-15-DiCB		181	262	pg/g	69.0	(25%-150%)
13C-19-TrCB		161	262	pg/g	61.3	(25%-150%)
13C-37-TrCB		164	262	pg/g	62.5	(25%-150%)
13C-54-TeCB		145	262	pg/g	55.3	(25%-150%)
13C-77-TeCB		192	262	pg/g	73.1	(25%-150%)
13C-81-TeCB		192	262	pg/g	73.2	(25%-150%)
13C-104-PeCB		172	262	pg/g	65.6	(25%-150%)
13C-105-PeCB		160	262	pg/g	61.1	(25%-150%)
13C-114-PeCB		164	262	pg/g	62.4	(25%-150%)
13C-118-PeCB		166	262	pg/g	63.1	(25%-150%)
13C-123-PeCB		169	262	pg/g	64.3	(25%-150%)
13C-126-PeCB		163	262	pg/g	62.0	(25%-150%)
13C-155-HxCB		160	262	pg/g	60.8	(25%-150%)
13C-156-HxCB	C	292	525	pg/g	55.6	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		150	262	pg/g	57.3	(25%-150%)
13C-169-HxCB		144	262	pg/g	54.7	(25%-150%)
13C-188-HpCB		182	262	pg/g	69.3	(25%-150%)
13C-189-HpCB		141	262	pg/g	53.7	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535001	<b>Date Collected:</b> 10/07/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 49.2
<b>Client ID:</b> VC-IRB-01		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 20:02	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.01 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			177	262	pg/g	67.6 (25%-150%)
13C-205-OcCB			170	262	pg/g	64.6 (25%-150%)
13C-206-NoCB			189	262	pg/g	72.1 (25%-150%)
13C-208-NoCB			179	262	pg/g	68.2 (25%-150%)
13C-209-DeCB			214	262	pg/g	81.4 (25%-150%)
13C-111-PeCB			216	262	pg/g	82.3 (30%-135%)
13C-28-TrCB			172	262	pg/g	65.4 (30%-135%)
13C-178-HpCB			258	262	pg/g	98.1 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535002  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-02  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 21:09  
**Data File:** c27oct17a-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 14:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.16 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 62.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		6.96	pg/g	3.48
2051-61-8	2-MoCB		25.5	pg/g	3.48
2051-62-9	3-MoCB	U	3.48	pg/g	3.48
13029-08-8	4-DiCB	U	3.48	pg/g	3.48
16605-91-7	5-DiCB	U	3.48	pg/g	3.48
25569-80-6	6-DiCB		8.50	pg/g	3.48
33284-50-3	7-DiCB	U	3.48	pg/g	3.48
34883-43-7	8-DiCB		31.2	pg/g	3.48
34883-39-1	9-DiCB	U	3.48	pg/g	3.48
33146-45-1	10-DiCB	U	3.48	pg/g	3.48
2050-67-1	11-DiCB		125	pg/g	34.8
2974-92-7	12-DiCB	C	17.1	pg/g	6.96
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	3.48	pg/g	3.48
2050-68-2	15-DiCB		75.8	pg/g	3.48
38444-78-9	16-TrCB		8.50	pg/g	3.48
37680-66-3	17-TrCB		15.5	pg/g	3.48
37680-65-2	18-TrCB	C	22.4	pg/g	6.96
38444-73-4	19-TrCB	U	3.48	pg/g	3.48
38444-84-7	20-TrCB	C	130	pg/g	6.96
55702-46-0	21-TrCB	C	29.3	pg/g	6.96
38444-85-8	22-TrCB		21.7	pg/g	3.48
55720-44-0	23-TrCB	U	3.48	pg/g	3.48
55702-45-9	24-TrCB	U	3.48	pg/g	3.48
55712-37-3	25-TrCB		13.0	pg/g	3.48
38444-81-4	26-TrCB	CU	6.96	pg/g	6.96
38444-76-7	27-TrCB	U	3.48	pg/g	3.48
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		72.5	pg/g	3.48
38444-77-8	32-TrCB		11.8	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535002  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-02  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 21:09  
**Data File:** c27oct17a-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 14:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.16 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 62.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	3.48	pg/g	3.48
37680-69-6	35-TrCB		8.70	pg/g	3.48
38444-87-0	36-TrCB	U	3.48	pg/g	3.48
38444-90-5	37-TrCB		56.6	pg/g	3.48
53555-66-1	38-TrCB	U	3.48	pg/g	3.48
38444-88-1	39-TrCB	U	3.48	pg/g	3.48
38444-93-8	40-TeCB	C	21.5	pg/g	6.96
52663-59-9	41-TeCB	U	3.48	pg/g	3.48
36559-22-5	42-TeCB		15.5	pg/g	3.48
70362-46-8	43-TeCB	U	3.48	pg/g	3.48
41464-39-5	44-TeCB	C	60.1	pg/g	10.4
70362-45-7	45-TeCB	CU	6.96	pg/g	6.96
41464-47-5	46-TeCB	U	3.48	pg/g	3.48
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB		8.76	pg/g	3.48
41464-40-8	49-TeCB	C	50.2	pg/g	6.96
62796-65-0	50-TeCB	CU	6.96	pg/g	6.96
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		55.1	pg/g	3.48
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	3.48	pg/g	3.48
74338-24-2	55-TeCB	U	3.48	pg/g	3.48
41464-43-1	56-TeCB		42.1	pg/g	3.48
70424-67-8	57-TeCB	U	3.48	pg/g	3.48
41464-49-7	58-TeCB	U	3.48	pg/g	3.48
74472-33-6	59-TeCB	CU	10.4	pg/g	10.4
33025-41-1	60-TeCB		13.8	pg/g	3.48
33284-53-6	61-TeCB	C	139	pg/g	13.9
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	3.48	pg/g	3.48
52663-58-8	64-TeCB		19.2	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535002  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-02  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 21:09  
**Data File:** c27oct17a-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 14:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.16 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 62.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		124	pg/g	3.48
73575-53-8	67-TeCB		3.52	pg/g	3.48
73575-52-7	68-TeCB	U	3.48	pg/g	3.48
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	3.48	pg/g	3.48
74338-23-1	73-TeCB	U	3.48	pg/g	3.48
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB		32.4	pg/g	3.48
70362-49-1	78-TeCB	U	3.48	pg/g	3.48
41464-48-6	79-TeCB	U	3.48	pg/g	3.48
33284-52-5	80-TeCB	U	3.48	pg/g	3.48
70362-50-4	81-TeCB	U	3.48	pg/g	3.48
52663-62-4	82-PeCB	U	3.48	pg/g	3.48
60145-20-2	83-PeCB	U	3.48	pg/g	3.48
52663-60-2	84-PeCB		13.0	pg/g	3.48
65510-45-4	85-PeCB	C	14.4	pg/g	10.4
55312-69-1	86-PeCB	C	45.3	pg/g	20.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	C	16.8	pg/g	6.96
73575-57-2	89-PeCB	U	3.48	pg/g	3.48
68194-07-0	90-PeCB	C	92.2	pg/g	10.4
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB		13.7	pg/g	3.48
73575-56-1	93-PeCB	CU	6.96	pg/g	6.96
73575-55-0	94-PeCB	U	3.48	pg/g	3.48
38379-99-6	95-PeCB		42.7	pg/g	3.48
73575-54-9	96-PeCB	U	3.48	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535002  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-02  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 21:09  
**Data File:** c27oct17a-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 14:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.16 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 62.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	6.96	pg/g	6.96
38380-01-7	99-PeCB		96.8	pg/g	3.48
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	3.48	pg/g	3.48
56558-16-8	104-PeCB	U	3.48	pg/g	3.48
32598-14-4	105-PeCB		38.8	pg/g	3.48
70424-69-0	106-PeCB	U	3.48	pg/g	3.48
70424-68-9	107-PeCB		11.6	pg/g	3.48
70362-41-3	108-PeCB	CU	6.96	pg/g	6.96
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	C	78.3	pg/g	6.96
39635-32-0	111-PeCB	U	3.48	pg/g	3.48
74472-36-9	112-PeCB	U	3.48	pg/g	3.48
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	3.48	pg/g	3.48
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		130	pg/g	3.48
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	3.48	pg/g	3.48
56558-18-0	121-PeCB	U	3.48	pg/g	3.48
76842-07-4	122-PeCB	U	3.48	pg/g	3.48
65510-44-3	123-PeCB	U	3.48	pg/g	3.48
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	3.48	pg/g	3.48
39635-33-1	127-PeCB	U	3.48	pg/g	3.48
38380-07-3	128-HxCB	C	18.9	pg/g	6.96

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535002  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-02  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 21:09  
**Data File:** c27oct17a-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 14:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.16 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 62.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	C	141	pg/g	10.4
52663-66-8	130-HxCB		8.42	pg/g	3.48
61798-70-7	131-HxCB	U	3.48	pg/g	3.48
38380-05-1	132-HxCB		22.7	pg/g	3.48
35694-04-3	133-HxCB		4.34	pg/g	3.48
52704-70-8	134-HxCB		4.91	pg/g	3.48
52744-13-5	135-HxCB	C	35.2	pg/g	6.96
38411-22-2	136-HxCB		12.3	pg/g	3.48
35694-06-5	137-HxCB	U	3.48	pg/g	3.48
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	6.96	pg/g	6.96
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB		7.20	pg/g	3.48
41411-61-4	142-HxCB	U	3.48	pg/g	3.48
68194-15-0	143-HxCB	U	3.48	pg/g	3.48
68194-14-9	144-HxCB	U	3.48	pg/g	3.48
74472-40-5	145-HxCB	U	3.48	pg/g	3.48
51908-16-8	146-HxCB		32.1	pg/g	3.48
68194-13-8	147-HxCB	C	93.4	pg/g	6.96
74472-41-6	148-HxCB	U	3.48	pg/g	3.48
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	3.48	pg/g	3.48
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	3.48	pg/g	3.48
35065-27-1	153-HxCB	C	162	pg/g	6.96
60145-22-4	154-HxCB		10.8	pg/g	3.48
33979-03-2	155-HxCB	U	3.48	pg/g	3.48
38380-08-4	156-HxCB	C	13.2	pg/g	6.96
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB		7.04	pg/g	3.48
39635-35-3	159-HxCB	U	3.48	pg/g	3.48
41411-62-5	160-HxCB	U	3.48	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535002  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-02  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 21:09  
**Data File:** c27oct17a-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 14:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.16 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 62.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	3.48	pg/g	3.48
39635-34-2	162-HxCB	U	3.48	pg/g	3.48
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	3.48	pg/g	3.48
74472-46-1	165-HxCB	U	3.48	pg/g	3.48
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	3.48	pg/g	3.48
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	3.48	pg/g	3.48
35065-30-6	170-HpCB		22.2	pg/g	3.48
52663-71-5	171-HpCB	C	8.55	pg/g	6.96
52663-74-8	172-HpCB		5.45	pg/g	3.48
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB		13.5	pg/g	3.48
40186-70-7	175-HpCB	U	3.48	pg/g	3.48
52663-65-7	176-HpCB		3.51	pg/g	3.48
52663-70-4	177-HpCB		24.2	pg/g	3.48
52663-67-9	178-HpCB		13.4	pg/g	3.48
52663-64-6	179-HpCB		17.1	pg/g	3.48
35065-29-3	180-HpCB	C	49.1	pg/g	6.96
74472-47-2	181-HpCB	U	3.48	pg/g	3.48
60145-23-5	182-HpCB	U	3.48	pg/g	3.48
52663-69-1	183-HpCB	C	20.0	pg/g	6.96
74472-48-3	184-HpCB	U	3.48	pg/g	3.48
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	3.48	pg/g	3.48
52663-68-0	187-HpCB		74.5	pg/g	3.48
74487-85-7	188-HpCB		3.65	pg/g	3.48
39635-31-9	189-HpCB	U	3.48	pg/g	3.48
41411-64-7	190-HpCB		3.65	pg/g	3.48
74472-50-7	191-HpCB	U	3.48	pg/g	3.48
74472-51-8	192-HpCB	U	3.48	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535002	<b>Date Collected:</b> 10/07/2017 14:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 21:09	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.16 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB		17.1	pg/g	3.48
52663-78-2	195-OcCB		4.96	pg/g	3.48
42740-50-1	196-OcCB		13.7	pg/g	3.48
33091-17-7	197-OcCB	CU	6.96	pg/g	6.96
68194-17-2	198-OcCB	C	30.3	pg/g	6.96
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB		12.5	pg/g	3.48
2136-99-4	202-OcCB		21.6	pg/g	3.48
52663-76-0	203-OcCB		10.3	pg/g	3.48
74472-52-9	204-OcCB	U	3.48	pg/g	3.48
74472-53-0	205-OcCB	U	3.48	pg/g	3.48
40186-72-9	206-NoCB		44.6	pg/g	3.48
52663-79-3	207-NoCB	U	3.48	pg/g	3.48
52663-77-1	208-NoCB		33.2	pg/g	3.48
2051-24-3	209-DeCB		59.4	pg/g	3.48
1336-36-3	Total PCB Congeners		2940	pg/g	3.48

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		97.0	348	pg/g	27.9	(15%-150%)
13C-3-MoCB		113	348	pg/g	32.6	(15%-150%)
13C-4-DiCB		114	348	pg/g	32.8	(25%-150%)
13C-15-DiCB		157	348	pg/g	45.1	(25%-150%)
13C-19-TrCB		138	348	pg/g	39.8	(25%-150%)
13C-37-TrCB		136	348	pg/g	39.1	(25%-150%)
13C-54-TeCB		130	348	pg/g	37.4	(25%-150%)
13C-77-TeCB		144	348	pg/g	41.5	(25%-150%)
13C-81-TeCB		129	348	pg/g	37.1	(25%-150%)
13C-104-PeCB		163	348	pg/g	46.9	(25%-150%)
13C-105-PeCB		128	348	pg/g	36.7	(25%-150%)
13C-114-PeCB		132	348	pg/g	38.0	(25%-150%)
13C-118-PeCB		137	348	pg/g	39.5	(25%-150%)
13C-123-PeCB		139	348	pg/g	40.0	(25%-150%)
13C-126-PeCB		129	348	pg/g	37.1	(25%-150%)
13C-155-HxCB		156	348	pg/g	44.8	(25%-150%)
13C-156-HxCB	C	251	696	pg/g	36.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		130	348	pg/g	37.4	(25%-150%)
13C-169-HxCB		125	348	pg/g	35.9	(25%-150%)
13C-188-HpCB		179	348	pg/g	51.5	(25%-150%)
13C-189-HpCB		132	348	pg/g	37.9	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535002	<b>Date Collected:</b> 10/07/2017 14:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-02		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 21:09	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.16 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			172	348	pg/g	49.5 (25%-150%)
13C-205-OcCB			163	348	pg/g	46.9 (25%-150%)
13C-206-NoCB			193	348	pg/g	55.3 (25%-150%)
13C-208-NoCB			177	348	pg/g	50.9 (25%-150%)
13C-209-DeCB			165	348	pg/g	47.4 (25%-150%)
13C-111-PeCB			274	348	pg/g	78.8 (30%-135%)
13C-28-TrCB			243	348	pg/g	69.7 (30%-135%)
13C-178-HpCB			337	348	pg/g	96.7 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535003  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-03-S1  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 22:15  
**Data File:** c27oct17a-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 15:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 38.7  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2.17	pg/g	2.17
2051-61-8	2-MoCB		8.23	pg/g	2.17
2051-62-9	3-MoCB		3.24	pg/g	2.17
13029-08-8	4-DiCB		4.73	pg/g	2.17
16605-91-7	5-DiCB	U	2.17	pg/g	2.17
25569-80-6	6-DiCB	U	2.17	pg/g	2.17
33284-50-3	7-DiCB	U	2.17	pg/g	2.17
34883-43-7	8-DiCB		9.11	pg/g	2.17
34883-39-1	9-DiCB	U	2.17	pg/g	2.17
33146-45-1	10-DiCB	U	2.17	pg/g	2.17
2050-67-1	11-DiCB		35.8	pg/g	21.7
2974-92-7	12-DiCB	C	5.59	pg/g	4.34
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2.17	pg/g	2.17
2050-68-2	15-DiCB		24.2	pg/g	2.17
38444-78-9	16-TrCB	U	2.17	pg/g	2.17
37680-66-3	17-TrCB		4.61	pg/g	2.17
37680-65-2	18-TrCB	C	5.98	pg/g	4.34
38444-73-4	19-TrCB	U	2.17	pg/g	2.17
38444-84-7	20-TrCB	C	34.6	pg/g	4.34
55702-46-0	21-TrCB	C	7.59	pg/g	4.34
38444-85-8	22-TrCB		6.52	pg/g	2.17
55720-44-0	23-TrCB	U	2.17	pg/g	2.17
55702-45-9	24-TrCB	U	2.17	pg/g	2.17
55712-37-3	25-TrCB		3.18	pg/g	2.17
38444-81-4	26-TrCB	C	5.35	pg/g	4.34
38444-76-7	27-TrCB	U	2.17	pg/g	2.17
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		19.1	pg/g	2.17
38444-77-8	32-TrCB		3.24	pg/g	2.17

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535003	<b>Date Collected:</b> 10/07/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 38.7
<b>Client ID:</b> VC-IRB-03-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 22:15	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2.17	pg/g	2.17
37680-69-6	35-TrCB	U	2.17	pg/g	2.17
38444-87-0	36-TrCB	U	2.17	pg/g	2.17
38444-90-5	37-TrCB		16.5	pg/g	2.17
53555-66-1	38-TrCB	U	2.17	pg/g	2.17
38444-88-1	39-TrCB	U	2.17	pg/g	2.17
38444-93-8	40-TeCB	C	5.56	pg/g	4.34
52663-59-9	41-TeCB	U	2.17	pg/g	2.17
36559-22-5	42-TeCB		3.70	pg/g	2.17
70362-46-8	43-TeCB	U	2.17	pg/g	2.17
41464-39-5	44-TeCB	C	15.6	pg/g	6.51
70362-45-7	45-TeCB	CU	4.34	pg/g	4.34
41464-47-5	46-TeCB	U	2.17	pg/g	2.17
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2.17	pg/g	2.17
41464-40-8	49-TeCB	C	12.9	pg/g	4.34
62796-65-0	50-TeCB	CU	4.34	pg/g	4.34
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		13.9	pg/g	2.17
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2.17	pg/g	2.17
74338-24-2	55-TeCB	U	2.17	pg/g	2.17
41464-43-1	56-TeCB		10.7	pg/g	2.17
70424-67-8	57-TeCB	U	2.17	pg/g	2.17
41464-49-7	58-TeCB	U	2.17	pg/g	2.17
74472-33-6	59-TeCB	CU	6.51	pg/g	6.51
33025-41-1	60-TeCB		3.62	pg/g	2.17
33284-53-6	61-TeCB	C	37.1	pg/g	8.68
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2.17	pg/g	2.17
52663-58-8	64-TeCB		4.99	pg/g	2.17

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535003	<b>Date Collected:</b> 10/07/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 38.7
<b>Client ID:</b> VC-IRB-03-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 22:15	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		32.9	pg/g	2.17
73575-53-8	67-TeCB	U	2.17	pg/g	2.17
73575-52-7	68-TeCB	U	2.17	pg/g	2.17
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2.17	pg/g	2.17
74338-23-1	73-TeCB	U	2.17	pg/g	2.17
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB		7.28	pg/g	2.17
70362-49-1	78-TeCB	U	2.17	pg/g	2.17
41464-48-6	79-TeCB	U	2.17	pg/g	2.17
33284-52-5	80-TeCB	U	2.17	pg/g	2.17
70362-50-4	81-TeCB	U	2.17	pg/g	2.17
52663-62-4	82-PeCB	U	2.17	pg/g	2.17
60145-20-2	83-PeCB	U	2.17	pg/g	2.17
52663-60-2	84-PeCB		3.24	pg/g	2.17
65510-45-4	85-PeCB	CU	6.51	pg/g	6.51
55312-69-1	86-PeCB	CU	13	pg/g	13.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4.34	pg/g	4.34
73575-57-2	89-PeCB	U	2.17	pg/g	2.17
68194-07-0	90-PeCB	C	23.7	pg/g	6.51
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB		4.01	pg/g	2.17
73575-56-1	93-PeCB	CU	4.34	pg/g	4.34
73575-55-0	94-PeCB	U	2.17	pg/g	2.17
38379-99-6	95-PeCB		11.1	pg/g	2.17
73575-54-9	96-PeCB	U	2.17	pg/g	2.17

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535003  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-03-S1  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 22:15  
**Data File:** c27oct17a-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 15:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 38.7  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4.34	pg/g	4.34
38380-01-7	99-PeCB		25.9	pg/g	2.17
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2.17	pg/g	2.17
56558-16-8	104-PeCB	U	2.17	pg/g	2.17
32598-14-4	105-PeCB		11.2	pg/g	2.17
70424-69-0	106-PeCB	U	2.17	pg/g	2.17
70424-68-9	107-PeCB		3.58	pg/g	2.17
70362-41-3	108-PeCB	CU	4.34	pg/g	4.34
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	C	23.3	pg/g	4.34
39635-32-0	111-PeCB	U	2.17	pg/g	2.17
74472-36-9	112-PeCB	U	2.17	pg/g	2.17
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2.17	pg/g	2.17
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		36.2	pg/g	2.17
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2.17	pg/g	2.17
56558-18-0	121-PeCB	U	2.17	pg/g	2.17
76842-07-4	122-PeCB	U	2.17	pg/g	2.17
65510-44-3	123-PeCB	U	2.17	pg/g	2.17
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2.17	pg/g	2.17
39635-33-1	127-PeCB	U	2.17	pg/g	2.17
38380-07-3	128-HxCB	C	5.24	pg/g	4.34

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535003  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-03-S1  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 22:15  
**Data File:** c27oct17a-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 15:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 38.7  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	C	41.8	pg/g	6.51
52663-66-8	130-HxCB		2.59	pg/g	2.17
61798-70-7	131-HxCB	U	2.17	pg/g	2.17
38380-05-1	132-HxCB	U	2.17	pg/g	2.17
35694-04-3	133-HxCB	U	2.17	pg/g	2.17
52704-70-8	134-HxCB	U	2.17	pg/g	2.17
52744-13-5	135-HxCB	CU	4.34	pg/g	4.34
38411-22-2	136-HxCB		3.46	pg/g	2.17
35694-06-5	137-HxCB	U	2.17	pg/g	2.17
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4.34	pg/g	4.34
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB		2.51	pg/g	2.17
41411-61-4	142-HxCB		6.24	pg/g	2.17
68194-15-0	143-HxCB	U	2.17	pg/g	2.17
68194-14-9	144-HxCB	U	2.17	pg/g	2.17
74472-40-5	145-HxCB	U	2.17	pg/g	2.17
51908-16-8	146-HxCB		9.39	pg/g	2.17
68194-13-8	147-HxCB	CU	4.34	pg/g	4.34
74472-41-6	148-HxCB	U	2.17	pg/g	2.17
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2.17	pg/g	2.17
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2.17	pg/g	2.17
35065-27-1	153-HxCB	C	47.3	pg/g	4.34
60145-22-4	154-HxCB	U	2.17	pg/g	2.17
33979-03-2	155-HxCB	U	2.17	pg/g	2.17
38380-08-4	156-HxCB	CU	4.34	pg/g	4.34
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB		2.22	pg/g	2.17
39635-35-3	159-HxCB	U	2.17	pg/g	2.17
41411-62-5	160-HxCB	U	2.17	pg/g	2.17

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535003  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-03-S1  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 22:15  
**Data File:** c27oct17a-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 15:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 38.7  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2.17	pg/g	2.17
39635-34-2	162-HxCB	U	2.17	pg/g	2.17
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2.17	pg/g	2.17
74472-46-1	165-HxCB	U	2.17	pg/g	2.17
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2.17	pg/g	2.17
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2.17	pg/g	2.17
35065-30-6	170-HpCB		6.82	pg/g	2.17
52663-71-5	171-HpCB	CU	4.34	pg/g	4.34
52663-74-8	172-HpCB	U	2.17	pg/g	2.17
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB		4.89	pg/g	2.17
40186-70-7	175-HpCB	U	2.17	pg/g	2.17
52663-65-7	176-HpCB	U	2.17	pg/g	2.17
52663-70-4	177-HpCB		7.76	pg/g	2.17
52663-67-9	178-HpCB		4.37	pg/g	2.17
52663-64-6	179-HpCB		5.29	pg/g	2.17
35065-29-3	180-HpCB	C	16.5	pg/g	4.34
74472-47-2	181-HpCB	U	2.17	pg/g	2.17
60145-23-5	182-HpCB	U	2.17	pg/g	2.17
52663-69-1	183-HpCB	C	6.47	pg/g	4.34
74472-48-3	184-HpCB	U	2.17	pg/g	2.17
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2.17	pg/g	2.17
52663-68-0	187-HpCB		23.8	pg/g	2.17
74487-85-7	188-HpCB	U	2.17	pg/g	2.17
39635-31-9	189-HpCB	U	2.17	pg/g	2.17
41411-64-7	190-HpCB	U	2.17	pg/g	2.17
74472-50-7	191-HpCB	U	2.17	pg/g	2.17
74472-51-8	192-HpCB	U	2.17	pg/g	2.17

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535003	<b>Date Collected:</b> 10/07/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 38.7
<b>Client ID:</b> VC-IRB-03-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 22:15	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB		6.31	pg/g	2.17
52663-78-2	195-OcCB	U	2.17	pg/g	2.17
42740-50-1	196-OcCB		4.43	pg/g	2.17
33091-17-7	197-OcCB	CU	4.34	pg/g	4.34
68194-17-2	198-OcCB	C	10.7	pg/g	4.34
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB		3.96	pg/g	2.17
2136-99-4	202-OcCB		6.95	pg/g	2.17
52663-76-0	203-OcCB		4.22	pg/g	2.17
74472-52-9	204-OcCB	U	2.17	pg/g	2.17
74472-53-0	205-OcCB	U	2.17	pg/g	2.17
40186-72-9	206-NoCB		13.0	pg/g	2.17
52663-79-3	207-NoCB		2.91	pg/g	2.17
52663-77-1	208-NoCB		9.36	pg/g	2.17
2051-24-3	209-DeCB		17.7	pg/g	2.17
1336-36-3	Total PCB Congeners		764	pg/g	2.17

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		96.4	217	pg/g	44.4	(15%-150%)
13C-3-MoCB		112	217	pg/g	51.6	(15%-150%)
13C-4-DiCB		115	217	pg/g	53.0	(25%-150%)
13C-15-DiCB		166	217	pg/g	76.6	(25%-150%)
13C-19-TrCB		147	217	pg/g	67.9	(25%-150%)
13C-37-TrCB		142	217	pg/g	65.4	(25%-150%)
13C-54-TeCB		130	217	pg/g	60.1	(25%-150%)
13C-77-TeCB		163	217	pg/g	75.1	(25%-150%)
13C-81-TeCB		163	217	pg/g	75.3	(25%-150%)
13C-104-PeCB		163	217	pg/g	75.1	(25%-150%)
13C-105-PeCB		138	217	pg/g	63.7	(25%-150%)
13C-114-PeCB		141	217	pg/g	64.8	(25%-150%)
13C-118-PeCB		145	217	pg/g	66.8	(25%-150%)
13C-123-PeCB		149	217	pg/g	68.5	(25%-150%)
13C-126-PeCB		138	217	pg/g	63.8	(25%-150%)
13C-155-HxCB		145	217	pg/g	66.7	(25%-150%)
13C-156-HxCB	C	249	434	pg/g	57.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		131	217	pg/g	60.4	(25%-150%)
13C-169-HxCB		121	217	pg/g	55.7	(25%-150%)
13C-188-HpCB		176	217	pg/g	81.2	(25%-150%)
13C-189-HpCB		127	217	pg/g	58.4	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535003	<b>Date Collected:</b> 10/07/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 38.7
<b>Client ID:</b> VC-IRB-03-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 22:15	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			168	217	pg/g	77.4 (25%-150%)
13C-205-OcCB			151	217	pg/g	69.4 (25%-150%)
13C-206-NoCB			166	217	pg/g	76.6 (25%-150%)
13C-208-NoCB			167	217	pg/g	77.1 (25%-150%)
13C-209-DeCB			190	217	pg/g	87.4 (25%-150%)
13C-111-PeCB			181	217	pg/g	83.3 (30%-135%)
13C-28-TrCB			143	217	pg/g	66.1 (30%-135%)
13C-178-HpCB			213	217	pg/g	98.3 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-03-S2  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 23:22  
**Data File:** c27oct17a-8  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 15:50  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.24 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 57.2  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	3.07	pg/g	3.07
2051-61-8	2-MoCB	U	3.07	pg/g	3.07
2051-62-9	3-MoCB	U	3.07	pg/g	3.07
13029-08-8	4-DiCB	U	3.07	pg/g	3.07
16605-91-7	5-DiCB	U	3.07	pg/g	3.07
25569-80-6	6-DiCB	U	3.07	pg/g	3.07
33284-50-3	7-DiCB	U	3.07	pg/g	3.07
34883-43-7	8-DiCB	U	3.07	pg/g	3.07
34883-39-1	9-DiCB	U	3.07	pg/g	3.07
33146-45-1	10-DiCB	U	3.07	pg/g	3.07
2050-67-1	11-DiCB	U	30.7	pg/g	30.7
2974-92-7	12-DiCB	CU	6.13	pg/g	6.13
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	3.07	pg/g	3.07
2050-68-2	15-DiCB	U	3.07	pg/g	3.07
38444-78-9	16-TrCB	U	3.07	pg/g	3.07
37680-66-3	17-TrCB	U	3.07	pg/g	3.07
37680-65-2	18-TrCB	CU	6.13	pg/g	6.13
38444-73-4	19-TrCB	U	3.07	pg/g	3.07
38444-84-7	20-TrCB	CU	6.13	pg/g	6.13
55702-46-0	21-TrCB	CU	6.13	pg/g	6.13
38444-85-8	22-TrCB	U	3.07	pg/g	3.07
55720-44-0	23-TrCB	U	3.07	pg/g	3.07
55702-45-9	24-TrCB	U	3.07	pg/g	3.07
55712-37-3	25-TrCB	U	3.07	pg/g	3.07
38444-81-4	26-TrCB	CU	6.13	pg/g	6.13
38444-76-7	27-TrCB	U	3.07	pg/g	3.07
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	3.07	pg/g	3.07
38444-77-8	32-TrCB	U	3.07	pg/g	3.07

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-03-S2  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 23:22  
**Data File:** c27oct17a-8  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 15:50  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.24 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 57.2  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	3.07	pg/g	3.07
37680-69-6	35-TrCB	U	3.07	pg/g	3.07
38444-87-0	36-TrCB	U	3.07	pg/g	3.07
38444-90-5	37-TrCB	U	3.07	pg/g	3.07
53555-66-1	38-TrCB	U	3.07	pg/g	3.07
38444-88-1	39-TrCB	U	3.07	pg/g	3.07
38444-93-8	40-TeCB	CU	6.13	pg/g	6.13
52663-59-9	41-TeCB	U	3.07	pg/g	3.07
36559-22-5	42-TeCB	U	3.07	pg/g	3.07
70362-46-8	43-TeCB	U	3.07	pg/g	3.07
41464-39-5	44-TeCB	CU	9.2	pg/g	9.20
70362-45-7	45-TeCB	CU	6.13	pg/g	6.13
41464-47-5	46-TeCB	U	3.07	pg/g	3.07
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	3.07	pg/g	3.07
41464-40-8	49-TeCB	CU	6.13	pg/g	6.13
62796-65-0	50-TeCB	CU	6.13	pg/g	6.13
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	3.07	pg/g	3.07
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	3.07	pg/g	3.07
74338-24-2	55-TeCB	U	3.07	pg/g	3.07
41464-43-1	56-TeCB	U	3.07	pg/g	3.07
70424-67-8	57-TeCB	U	3.07	pg/g	3.07
41464-49-7	58-TeCB	U	3.07	pg/g	3.07
74472-33-6	59-TeCB	CU	9.2	pg/g	9.20
33025-41-1	60-TeCB	U	3.07	pg/g	3.07
33284-53-6	61-TeCB	CU	12.3	pg/g	12.3
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	3.07	pg/g	3.07
52663-58-8	64-TeCB	U	3.07	pg/g	3.07

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-03-S2  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 23:22  
**Data File:** c27oct17a-8  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 15:50  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.24 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 57.2  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	3.07	pg/g	3.07
73575-53-8	67-TeCB	U	3.07	pg/g	3.07
73575-52-7	68-TeCB	U	3.07	pg/g	3.07
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	3.07	pg/g	3.07
74338-23-1	73-TeCB	U	3.07	pg/g	3.07
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	3.07	pg/g	3.07
70362-49-1	78-TeCB	U	3.07	pg/g	3.07
41464-48-6	79-TeCB	U	3.07	pg/g	3.07
33284-52-5	80-TeCB	U	3.07	pg/g	3.07
70362-50-4	81-TeCB	U	3.07	pg/g	3.07
52663-62-4	82-PeCB	U	3.07	pg/g	3.07
60145-20-2	83-PeCB	U	3.07	pg/g	3.07
52663-60-2	84-PeCB	U	3.07	pg/g	3.07
65510-45-4	85-PeCB	CU	9.2	pg/g	9.20
55312-69-1	86-PeCB	CU	18.4	pg/g	18.4
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	6.13	pg/g	6.13
73575-57-2	89-PeCB	U	3.07	pg/g	3.07
68194-07-0	90-PeCB	CU	9.2	pg/g	9.20
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	3.07	pg/g	3.07
73575-56-1	93-PeCB	CU	6.13	pg/g	6.13
73575-55-0	94-PeCB	U	3.07	pg/g	3.07
38379-99-6	95-PeCB	U	3.07	pg/g	3.07
73575-54-9	96-PeCB	U	3.07	pg/g	3.07

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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SDG Number: L1736278  
Lab Sample ID: 11535004  
Client Sample: 1613B/1668A Soil  
Client ID: VC-IRB-03-S2  
Batch ID: 36009  
Run Date: 10/27/2017 23:22  
Data File: c27oct17a-8  
Prep Batch: 36007  
Prep Date: 25-OCT-17

Client: ALPH001  
Date Collected: 10/07/2017 15:50  
Date Received: 10/18/2017 10:20  
Method: EPA Method 1668A  
Analyst: MLS  
Prep Method: SW846 3540C  
Prep Aliquot: 15.24 g

Project: ALPH00217  
Matrix: SOIL  
%Moisture: 57.2  
Prep Basis: Dry Weight  
Instrument: HRP791  
Dilution: 1  
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	6.13	pg/g	6.13
38380-01-7	99-PeCB	U	3.07	pg/g	3.07
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	3.07	pg/g	3.07
56558-16-8	104-PeCB	U	3.07	pg/g	3.07
32598-14-4	105-PeCB	U	3.07	pg/g	3.07
70424-69-0	106-PeCB	U	3.07	pg/g	3.07
70424-68-9	107-PeCB	U	3.07	pg/g	3.07
70362-41-3	108-PeCB	CU	6.13	pg/g	6.13
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	6.13	pg/g	6.13
39635-32-0	111-PeCB	U	3.07	pg/g	3.07
74472-36-9	112-PeCB	U	3.07	pg/g	3.07
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	3.07	pg/g	3.07
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	3.07	pg/g	3.07
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	3.07	pg/g	3.07
56558-18-0	121-PeCB	U	3.07	pg/g	3.07
76842-07-4	122-PeCB	U	3.07	pg/g	3.07
65510-44-3	123-PeCB	U	3.07	pg/g	3.07
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	3.07	pg/g	3.07
39635-33-1	127-PeCB	U	3.07	pg/g	3.07
38380-07-3	128-HxCB	CU	6.13	pg/g	6.13

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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SDG Number: L1736278  
Lab Sample ID: 11535004  
Client Sample: 1613B/1668A Soil  
Client ID: VC-IRB-03-S2  
Batch ID: 36009  
Run Date: 10/27/2017 23:22  
Data File: c27oct17a-8  
Prep Batch: 36007  
Prep Date: 25-OCT-17

Client: ALPH001  
Date Collected: 10/07/2017 15:50  
Date Received: 10/18/2017 10:20  
Method: EPA Method 1668A  
Analyst: MLS  
Prep Method: SW846 3540C  
Prep Aliquot: 15.24 g

Project: ALPH00217  
Matrix: SOIL  
%Moisture: 57.2  
Prep Basis: Dry Weight  
Instrument: HRP791  
Dilution: 1  
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	9.2	pg/g	9.20
52663-66-8	130-HxCB	U	3.07	pg/g	3.07
61798-70-7	131-HxCB	U	3.07	pg/g	3.07
38380-05-1	132-HxCB	U	3.07	pg/g	3.07
35694-04-3	133-HxCB	U	3.07	pg/g	3.07
52704-70-8	134-HxCB	U	3.07	pg/g	3.07
52744-13-5	135-HxCB	CU	6.13	pg/g	6.13
38411-22-2	136-HxCB	U	3.07	pg/g	3.07
35694-06-5	137-HxCB	U	3.07	pg/g	3.07
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	6.13	pg/g	6.13
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	3.07	pg/g	3.07
41411-61-4	142-HxCB	U	3.07	pg/g	3.07
68194-15-0	143-HxCB	U	3.07	pg/g	3.07
68194-14-9	144-HxCB	U	3.07	pg/g	3.07
74472-40-5	145-HxCB	U	3.07	pg/g	3.07
51908-16-8	146-HxCB	U	3.07	pg/g	3.07
68194-13-8	147-HxCB	CU	6.13	pg/g	6.13
74472-41-6	148-HxCB	U	3.07	pg/g	3.07
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	3.07	pg/g	3.07
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	3.07	pg/g	3.07
35065-27-1	153-HxCB	CU	6.13	pg/g	6.13
60145-22-4	154-HxCB	U	3.07	pg/g	3.07
33979-03-2	155-HxCB	U	3.07	pg/g	3.07
38380-08-4	156-HxCB	CU	6.13	pg/g	6.13
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	3.07	pg/g	3.07
39635-35-3	159-HxCB	U	3.07	pg/g	3.07
41411-62-5	160-HxCB	U	3.07	pg/g	3.07

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-03-S2  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 23:22  
**Data File:** c27oct17a-8  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 15:50  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.24 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 57.2  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	3.07	pg/g	3.07
39635-34-2	162-HxCB	U	3.07	pg/g	3.07
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	3.07	pg/g	3.07
74472-46-1	165-HxCB	U	3.07	pg/g	3.07
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	3.07	pg/g	3.07
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	3.07	pg/g	3.07
35065-30-6	170-HpCB	U	3.07	pg/g	3.07
52663-71-5	171-HpCB	CU	6.13	pg/g	6.13
52663-74-8	172-HpCB	U	3.07	pg/g	3.07
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	3.07	pg/g	3.07
40186-70-7	175-HpCB	U	3.07	pg/g	3.07
52663-65-7	176-HpCB	U	3.07	pg/g	3.07
52663-70-4	177-HpCB	U	3.07	pg/g	3.07
52663-67-9	178-HpCB	U	3.07	pg/g	3.07
52663-64-6	179-HpCB	U	3.07	pg/g	3.07
35065-29-3	180-HpCB	CU	6.13	pg/g	6.13
74472-47-2	181-HpCB	U	3.07	pg/g	3.07
60145-23-5	182-HpCB	U	3.07	pg/g	3.07
52663-69-1	183-HpCB	CU	6.13	pg/g	6.13
74472-48-3	184-HpCB	U	3.07	pg/g	3.07
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	3.07	pg/g	3.07
52663-68-0	187-HpCB	U	3.07	pg/g	3.07
74487-85-7	188-HpCB	U	3.07	pg/g	3.07
39635-31-9	189-HpCB	U	3.07	pg/g	3.07
41411-64-7	190-HpCB	U	3.07	pg/g	3.07
74472-50-7	191-HpCB	U	3.07	pg/g	3.07
74472-51-8	192-HpCB	U	3.07	pg/g	3.07

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535004	<b>Date Collected:</b> 10/07/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 57.2
<b>Client ID:</b> VC-IRB-03-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 23:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.24 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	3.07	pg/g	3.07
52663-78-2	195-OcCB	U	3.07	pg/g	3.07
42740-50-1	196-OcCB	U	3.07	pg/g	3.07
33091-17-7	197-OcCB	CU	6.13	pg/g	6.13
68194-17-2	198-OcCB	CU	6.13	pg/g	6.13
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	3.07	pg/g	3.07
2136-99-4	202-OcCB	U	3.07	pg/g	3.07
52663-76-0	203-OcCB	U	3.07	pg/g	3.07
74472-52-9	204-OcCB	U	3.07	pg/g	3.07
74472-53-0	205-OcCB	U	3.07	pg/g	3.07
40186-72-9	206-NoCB	U	3.07	pg/g	3.07
52663-79-3	207-NoCB	U	3.07	pg/g	3.07
52663-77-1	208-NoCB	U	3.07	pg/g	3.07
2051-24-3	209-DeCB	U	3.07	pg/g	3.07
1336-36-3	Total PCB Congeners	U	3.07	pg/g	3.07

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		103	307	pg/g	33.5	(15%-150%)
13C-3-MoCB		114	307	pg/g	37.2	(15%-150%)
13C-4-DiCB		120	307	pg/g	39.2	(25%-150%)
13C-15-DiCB		169	307	pg/g	55.1	(25%-150%)
13C-19-TrCB		151	307	pg/g	49.1	(25%-150%)
13C-37-TrCB		151	307	pg/g	49.3	(25%-150%)
13C-54-TeCB		132	307	pg/g	43.1	(25%-150%)
13C-77-TeCB		177	307	pg/g	57.6	(25%-150%)
13C-81-TeCB		157	307	pg/g	51.3	(25%-150%)
13C-104-PeCB		186	307	pg/g	60.7	(25%-150%)
13C-105-PeCB		163	307	pg/g	53.3	(25%-150%)
13C-114-PeCB		170	307	pg/g	55.6	(25%-150%)
13C-118-PeCB		175	307	pg/g	57.0	(25%-150%)
13C-123-PeCB		182	307	pg/g	59.4	(25%-150%)
13C-126-PeCB		165	307	pg/g	53.7	(25%-150%)
13C-155-HxCB		178	307	pg/g	58.0	(25%-150%)
13C-156-HxCB	C	310	613	pg/g	50.6	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		163	307	pg/g	53.1	(25%-150%)
13C-169-HxCB		151	307	pg/g	49.3	(25%-150%)
13C-188-HpCB		204	307	pg/g	66.4	(25%-150%)
13C-189-HpCB		159	307	pg/g	51.8	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535004	<b>Date Collected:</b> 10/07/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 57.2
<b>Client ID:</b> VC-IRB-03-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 23:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.24 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			206	307	pg/g	67.1 (25%-150%)
13C-205-OcCB			195	307	pg/g	63.7 (25%-150%)
13C-206-NoCB			206	307	pg/g	67.1 (25%-150%)
13C-208-NoCB			215	307	pg/g	70.1 (25%-150%)
13C-209-DeCB			202	307	pg/g	65.8 (25%-150%)
13C-111-PeCB			285	307	pg/g	93.1 (30%-135%)
13C-28-TrCB			218	307	pg/g	71.1 (30%-135%)
13C-178-HpCB			334	307	pg/g	109 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535005  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-04  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 00:29  
**Data File:** c27oct17a-9  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 18:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.36 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 50.6  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2.63	pg/g	2.63
2051-61-8	2-MoCB		3.90	pg/g	2.63
2051-62-9	3-MoCB	U	2.63	pg/g	2.63
13029-08-8	4-DiCB	U	2.63	pg/g	2.63
16605-91-7	5-DiCB	U	2.63	pg/g	2.63
25569-80-6	6-DiCB	U	2.63	pg/g	2.63
33284-50-3	7-DiCB	U	2.63	pg/g	2.63
34883-43-7	8-DiCB	U	2.63	pg/g	2.63
34883-39-1	9-DiCB	U	2.63	pg/g	2.63
33146-45-1	10-DiCB	U	2.63	pg/g	2.63
2050-67-1	11-DiCB	U	26.3	pg/g	26.3
2974-92-7	12-DiCB	CU	5.27	pg/g	5.27
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2.63	pg/g	2.63
2050-68-2	15-DiCB	U	2.63	pg/g	2.63
38444-78-9	16-TrCB	U	2.63	pg/g	2.63
37680-66-3	17-TrCB	U	2.63	pg/g	2.63
37680-65-2	18-TrCB	CU	5.27	pg/g	5.27
38444-73-4	19-TrCB	U	2.63	pg/g	2.63
38444-84-7	20-TrCB	CU	5.27	pg/g	5.27
55702-46-0	21-TrCB	CU	5.27	pg/g	5.27
38444-85-8	22-TrCB	U	2.63	pg/g	2.63
55720-44-0	23-TrCB	U	2.63	pg/g	2.63
55702-45-9	24-TrCB	U	2.63	pg/g	2.63
55712-37-3	25-TrCB	U	2.63	pg/g	2.63
38444-81-4	26-TrCB	CU	5.27	pg/g	5.27
38444-76-7	27-TrCB	U	2.63	pg/g	2.63
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2.63	pg/g	2.63
38444-77-8	32-TrCB	U	2.63	pg/g	2.63

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535005  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-04  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 00:29  
**Data File:** c27oct17a-9  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 18:40  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.36 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 50.6  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2.63	pg/g	2.63
37680-69-6	35-TrCB	U	2.63	pg/g	2.63
38444-87-0	36-TrCB	U	2.63	pg/g	2.63
38444-90-5	37-TrCB	U	2.63	pg/g	2.63
53555-66-1	38-TrCB	U	2.63	pg/g	2.63
38444-88-1	39-TrCB	U	2.63	pg/g	2.63
38444-93-8	40-TeCB	CU	5.27	pg/g	5.27
52663-59-9	41-TeCB	U	2.63	pg/g	2.63
36559-22-5	42-TeCB	U	2.63	pg/g	2.63
70362-46-8	43-TeCB	U	2.63	pg/g	2.63
41464-39-5	44-TeCB	CU	7.9	pg/g	7.90
70362-45-7	45-TeCB	CU	5.27	pg/g	5.27
41464-47-5	46-TeCB	U	2.63	pg/g	2.63
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2.63	pg/g	2.63
41464-40-8	49-TeCB	CU	5.27	pg/g	5.27
62796-65-0	50-TeCB	CU	5.27	pg/g	5.27
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2.63	pg/g	2.63
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2.63	pg/g	2.63
74338-24-2	55-TeCB	U	2.63	pg/g	2.63
41464-43-1	56-TeCB	U	2.63	pg/g	2.63
70424-67-8	57-TeCB	U	2.63	pg/g	2.63
41464-49-7	58-TeCB	U	2.63	pg/g	2.63
74472-33-6	59-TeCB	CU	7.9	pg/g	7.90
33025-41-1	60-TeCB	U	2.63	pg/g	2.63
33284-53-6	61-TeCB	CU	10.5	pg/g	10.5
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2.63	pg/g	2.63
52663-58-8	64-TeCB	U	2.63	pg/g	2.63

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535005  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-04  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 00:29  
**Data File:** c27oct17a-9  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 18:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.36 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 50.6  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2.63	pg/g	2.63
73575-53-8	67-TeCB	U	2.63	pg/g	2.63
73575-52-7	68-TeCB	U	2.63	pg/g	2.63
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2.63	pg/g	2.63
74338-23-1	73-TeCB	U	2.63	pg/g	2.63
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2.63	pg/g	2.63
70362-49-1	78-TeCB	U	2.63	pg/g	2.63
41464-48-6	79-TeCB	U	2.63	pg/g	2.63
33284-52-5	80-TeCB	U	2.63	pg/g	2.63
70362-50-4	81-TeCB	U	2.63	pg/g	2.63
52663-62-4	82-PeCB	U	2.63	pg/g	2.63
60145-20-2	83-PeCB	U	2.63	pg/g	2.63
52663-60-2	84-PeCB	U	2.63	pg/g	2.63
65510-45-4	85-PeCB	CU	7.9	pg/g	7.90
55312-69-1	86-PeCB	CU	15.8	pg/g	15.8
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	5.27	pg/g	5.27
73575-57-2	89-PeCB	U	2.63	pg/g	2.63
68194-07-0	90-PeCB	CU	7.9	pg/g	7.90
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2.63	pg/g	2.63
73575-56-1	93-PeCB	CU	5.27	pg/g	5.27
73575-55-0	94-PeCB	U	2.63	pg/g	2.63
38379-99-6	95-PeCB	U	2.63	pg/g	2.63
73575-54-9	96-PeCB	U	2.63	pg/g	2.63

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535005  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-04  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 00:29  
**Data File:** c27oct17a-9  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 18:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.36 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 50.6  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	5.27	pg/g	5.27
38380-01-7	99-PeCB	U	2.63	pg/g	2.63
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2.63	pg/g	2.63
56558-16-8	104-PeCB	U	2.63	pg/g	2.63
32598-14-4	105-PeCB	U	2.63	pg/g	2.63
70424-69-0	106-PeCB	U	2.63	pg/g	2.63
70424-68-9	107-PeCB	U	2.63	pg/g	2.63
70362-41-3	108-PeCB	CU	5.27	pg/g	5.27
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	5.27	pg/g	5.27
39635-32-0	111-PeCB	U	2.63	pg/g	2.63
74472-36-9	112-PeCB	U	2.63	pg/g	2.63
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2.63	pg/g	2.63
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2.63	pg/g	2.63
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2.63	pg/g	2.63
56558-18-0	121-PeCB	U	2.63	pg/g	2.63
76842-07-4	122-PeCB	U	2.63	pg/g	2.63
65510-44-3	123-PeCB	U	2.63	pg/g	2.63
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2.63	pg/g	2.63
39635-33-1	127-PeCB	U	2.63	pg/g	2.63
38380-07-3	128-HxCB	CU	5.27	pg/g	5.27

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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SDG Number: L1736278  
Lab Sample ID: 11535005  
Client Sample: 1613B/1668A Soil  
Client ID: VC-IRB-04  
Batch ID: 36009  
Run Date: 10/28/2017 00:29  
Data File: c27oct17a-9  
Prep Batch: 36007  
Prep Date: 25-OCT-17

Client: ALPH001  
Date Collected: 10/06/2017 18:40  
Date Received: 10/18/2017 10:20  
Method: EPA Method 1668A  
Analyst: MLS  
Prep Method: SW846 3540C  
Prep Aliquot: 15.36 g

Project: ALPH00217  
Matrix: SOIL  
%Moisture: 50.6  
Prep Basis: Dry Weight  
Instrument: HRP791  
Dilution: 1  
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	7.9	pg/g	7.90
52663-66-8	130-HxCB	U	2.63	pg/g	2.63
61798-70-7	131-HxCB	U	2.63	pg/g	2.63
38380-05-1	132-HxCB	U	2.63	pg/g	2.63
35694-04-3	133-HxCB	U	2.63	pg/g	2.63
52704-70-8	134-HxCB	U	2.63	pg/g	2.63
52744-13-5	135-HxCB	CU	5.27	pg/g	5.27
38411-22-2	136-HxCB	U	2.63	pg/g	2.63
35694-06-5	137-HxCB	U	2.63	pg/g	2.63
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	5.27	pg/g	5.27
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2.63	pg/g	2.63
41411-61-4	142-HxCB	U	2.63	pg/g	2.63
68194-15-0	143-HxCB	U	2.63	pg/g	2.63
68194-14-9	144-HxCB	U	2.63	pg/g	2.63
74472-40-5	145-HxCB	U	2.63	pg/g	2.63
51908-16-8	146-HxCB	U	2.63	pg/g	2.63
68194-13-8	147-HxCB	CU	5.27	pg/g	5.27
74472-41-6	148-HxCB	U	2.63	pg/g	2.63
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2.63	pg/g	2.63
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2.63	pg/g	2.63
35065-27-1	153-HxCB	CU	5.27	pg/g	5.27
60145-22-4	154-HxCB	U	2.63	pg/g	2.63
33979-03-2	155-HxCB	U	2.63	pg/g	2.63
38380-08-4	156-HxCB	CU	5.27	pg/g	5.27
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2.63	pg/g	2.63
39635-35-3	159-HxCB	U	2.63	pg/g	2.63
41411-62-5	160-HxCB	U	2.63	pg/g	2.63

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 6 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535005  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-04  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 00:29  
**Data File:** c27oct17a-9  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 18:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.36 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 50.6  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2.63	pg/g	2.63
39635-34-2	162-HxCB	U	2.63	pg/g	2.63
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2.63	pg/g	2.63
74472-46-1	165-HxCB	U	2.63	pg/g	2.63
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2.63	pg/g	2.63
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2.63	pg/g	2.63
35065-30-6	170-HpCB	U	2.63	pg/g	2.63
52663-71-5	171-HpCB	CU	5.27	pg/g	5.27
52663-74-8	172-HpCB	U	2.63	pg/g	2.63
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2.63	pg/g	2.63
40186-70-7	175-HpCB	U	2.63	pg/g	2.63
52663-65-7	176-HpCB	U	2.63	pg/g	2.63
52663-70-4	177-HpCB	U	2.63	pg/g	2.63
52663-67-9	178-HpCB	U	2.63	pg/g	2.63
52663-64-6	179-HpCB	U	2.63	pg/g	2.63
35065-29-3	180-HpCB	CU	5.27	pg/g	5.27
74472-47-2	181-HpCB	U	2.63	pg/g	2.63
60145-23-5	182-HpCB	U	2.63	pg/g	2.63
52663-69-1	183-HpCB	CU	5.27	pg/g	5.27
74472-48-3	184-HpCB	U	2.63	pg/g	2.63
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2.63	pg/g	2.63
52663-68-0	187-HpCB	U	2.63	pg/g	2.63
74487-85-7	188-HpCB	U	2.63	pg/g	2.63
39635-31-9	189-HpCB	U	2.63	pg/g	2.63
41411-64-7	190-HpCB	U	2.63	pg/g	2.63
74472-50-7	191-HpCB	U	2.63	pg/g	2.63
74472-51-8	192-HpCB	U	2.63	pg/g	2.63

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535005	<b>Date Collected:</b> 10/06/2017 18:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.6
<b>Client ID:</b> VC-IRB-04		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 00:29	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2.63	pg/g	2.63
52663-78-2	195-OcCB	U	2.63	pg/g	2.63
42740-50-1	196-OcCB	U	2.63	pg/g	2.63
33091-17-7	197-OcCB	CU	5.27	pg/g	5.27
68194-17-2	198-OcCB	CU	5.27	pg/g	5.27
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2.63	pg/g	2.63
2136-99-4	202-OcCB	U	2.63	pg/g	2.63
52663-76-0	203-OcCB	U	2.63	pg/g	2.63
74472-52-9	204-OcCB	U	2.63	pg/g	2.63
74472-53-0	205-OcCB	U	2.63	pg/g	2.63
40186-72-9	206-NoCB	U	2.63	pg/g	2.63
52663-79-3	207-NoCB	U	2.63	pg/g	2.63
52663-77-1	208-NoCB	U	2.63	pg/g	2.63
2051-24-3	209-DeCB	U	2.63	pg/g	2.63
1336-36-3	Total PCB Congeners		3.90	pg/g	2.63

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		102	263	pg/g	38.7	(15%-150%)
13C-3-MoCB		113	263	pg/g	43.0	(15%-150%)
13C-4-DiCB		120	263	pg/g	45.4	(25%-150%)
13C-15-DiCB		176	263	pg/g	66.7	(25%-150%)
13C-19-TrCB		154	263	pg/g	58.6	(25%-150%)
13C-37-TrCB		151	263	pg/g	57.3	(25%-150%)
13C-54-TeCB		143	263	pg/g	54.4	(25%-150%)
13C-77-TeCB		161	263	pg/g	61.1	(25%-150%)
13C-81-TeCB		147	263	pg/g	55.8	(25%-150%)
13C-104-PeCB		195	263	pg/g	74.1	(25%-150%)
13C-105-PeCB		150	263	pg/g	56.8	(25%-150%)
13C-114-PeCB		155	263	pg/g	58.7	(25%-150%)
13C-118-PeCB		158	263	pg/g	60.0	(25%-150%)
13C-123-PeCB		165	263	pg/g	62.7	(25%-150%)
13C-126-PeCB		146	263	pg/g	55.6	(25%-150%)
13C-155-HxCB		185	263	pg/g	70.3	(25%-150%)
13C-156-HxCB	C	283	527	pg/g	53.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		149	263	pg/g	56.6	(25%-150%)
13C-169-HxCB		130	263	pg/g	49.5	(25%-150%)
13C-188-HpCB		227	263	pg/g	86.0	(25%-150%)
13C-189-HpCB		149	263	pg/g	56.6	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535005	<b>Date Collected:</b> 10/06/2017 18:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.6
<b>Client ID:</b> VC-IRB-04		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 00:29	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.36 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			213	263	pg/g	80.8 (25%-150%)
13C-205-OcCB			181	263	pg/g	68.6 (25%-150%)
13C-206-NoCB			177	263	pg/g	67.3 (25%-150%)
13C-208-NoCB			213	263	pg/g	80.8 (25%-150%)
13C-209-DeCB			186	263	pg/g	70.5 (25%-150%)
13C-111-PeCB			222	263	pg/g	84.1 (30%-135%)
13C-28-TrCB			184	263	pg/g	69.7 (30%-135%)
13C-178-HpCB			272	263	pg/g	103 (30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535006  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 01:35  
**Data File:** c27oct17a-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:30  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 58.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	3.18	pg/g	3.18
2051-61-8	2-MoCB		11.0	pg/g	3.18
2051-62-9	3-MoCB		6.27	pg/g	3.18
13029-08-8	4-DiCB	U	3.18	pg/g	3.18
16605-91-7	5-DiCB	U	3.18	pg/g	3.18
25569-80-6	6-DiCB		5.89	pg/g	3.18
33284-50-3	7-DiCB	U	3.18	pg/g	3.18
34883-43-7	8-DiCB		20.0	pg/g	3.18
34883-39-1	9-DiCB	U	3.18	pg/g	3.18
33146-45-1	10-DiCB	U	3.18	pg/g	3.18
2050-67-1	11-DiCB		43.2	pg/g	31.8
2974-92-7	12-DiCB	C	8.18	pg/g	6.35
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	3.18	pg/g	3.18
2050-68-2	15-DiCB		33.5	pg/g	3.18
38444-78-9	16-TrCB		5.43	pg/g	3.18
37680-66-3	17-TrCB		11.8	pg/g	3.18
37680-65-2	18-TrCB	C	15.2	pg/g	6.35
38444-73-4	19-TrCB	U	3.18	pg/g	3.18
38444-84-7	20-TrCB	C	62.1	pg/g	6.35
55702-46-0	21-TrCB	C	17.2	pg/g	6.35
38444-85-8	22-TrCB		13.4	pg/g	3.18
55720-44-0	23-TrCB	U	3.18	pg/g	3.18
55702-45-9	24-TrCB	U	3.18	pg/g	3.18
55712-37-3	25-TrCB		5.92	pg/g	3.18
38444-81-4	26-TrCB	C	9.20	pg/g	6.35
38444-76-7	27-TrCB	U	3.18	pg/g	3.18
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		34.0	pg/g	3.18
38444-77-8	32-TrCB		9.64	pg/g	3.18

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535006  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 01:35  
**Data File:** c27oct17a-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 58.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	3.18	pg/g	3.18
37680-69-6	35-TrCB		3.74	pg/g	3.18
38444-87-0	36-TrCB	U	3.18	pg/g	3.18
38444-90-5	37-TrCB		26.5	pg/g	3.18
53555-66-1	38-TrCB	U	3.18	pg/g	3.18
38444-88-1	39-TrCB	U	3.18	pg/g	3.18
38444-93-8	40-TeCB	C	17.3	pg/g	6.35
52663-59-9	41-TeCB	U	3.18	pg/g	3.18
36559-22-5	42-TeCB		16.2	pg/g	3.18
70362-46-8	43-TeCB	U	3.18	pg/g	3.18
41464-39-5	44-TeCB	C	54.9	pg/g	9.53
70362-45-7	45-TeCB	C	6.80	pg/g	6.35
41464-47-5	46-TeCB	U	3.18	pg/g	3.18
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB		5.96	pg/g	3.18
41464-40-8	49-TeCB	C	49.6	pg/g	6.35
62796-65-0	50-TeCB	CU	6.35	pg/g	6.35
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		55.4	pg/g	3.18
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	3.18	pg/g	3.18
74338-24-2	55-TeCB	U	3.18	pg/g	3.18
41464-43-1	56-TeCB		26.5	pg/g	3.18
70424-67-8	57-TeCB	U	3.18	pg/g	3.18
41464-49-7	58-TeCB	U	3.18	pg/g	3.18
74472-33-6	59-TeCB	CU	9.53	pg/g	9.53
33025-41-1	60-TeCB		9.36	pg/g	3.18
33284-53-6	61-TeCB	C	102	pg/g	12.7
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	3.18	pg/g	3.18
52663-58-8	64-TeCB		17.5	pg/g	3.18

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535006  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 01:35  
**Data File:** c27oct17a-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 58.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		81.2	pg/g	3.18
73575-53-8	67-TeCB	U	3.18	pg/g	3.18
73575-52-7	68-TeCB	U	3.18	pg/g	3.18
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	3.18	pg/g	3.18
74338-23-1	73-TeCB	U	3.18	pg/g	3.18
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB		13.7	pg/g	3.18
70362-49-1	78-TeCB	U	3.18	pg/g	3.18
41464-48-6	79-TeCB	U	3.18	pg/g	3.18
33284-52-5	80-TeCB	U	3.18	pg/g	3.18
70362-50-4	81-TeCB	U	3.18	pg/g	3.18
52663-62-4	82-PeCB		5.70	pg/g	3.18
60145-20-2	83-PeCB		4.10	pg/g	3.18
52663-60-2	84-PeCB		17.8	pg/g	3.18
65510-45-4	85-PeCB	C	12.7	pg/g	9.53
55312-69-1	86-PeCB	C	47.2	pg/g	19.1
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	C	25.7	pg/g	6.35
73575-57-2	89-PeCB	U	3.18	pg/g	3.18
68194-07-0	90-PeCB	C	95.4	pg/g	9.53
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB		15.6	pg/g	3.18
73575-56-1	93-PeCB	CU	6.35	pg/g	6.35
73575-55-0	94-PeCB	U	3.18	pg/g	3.18
38379-99-6	95-PeCB		52.7	pg/g	3.18
73575-54-9	96-PeCB	U	3.18	pg/g	3.18

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535006  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 01:35  
**Data File:** c27oct17a-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 58.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	C	6.50	pg/g	6.35
38380-01-7	99-PeCB		96.4	pg/g	3.18
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	3.18	pg/g	3.18
56558-16-8	104-PeCB	U	3.18	pg/g	3.18
32598-14-4	105-PeCB		33.3	pg/g	3.18
70424-69-0	106-PeCB	U	3.18	pg/g	3.18
70424-68-9	107-PeCB		8.37	pg/g	3.18
70362-41-3	108-PeCB	CU	6.35	pg/g	6.35
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	C	77.4	pg/g	6.35
39635-32-0	111-PeCB	U	3.18	pg/g	3.18
74472-36-9	112-PeCB	U	3.18	pg/g	3.18
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	3.18	pg/g	3.18
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		112	pg/g	3.18
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	3.18	pg/g	3.18
56558-18-0	121-PeCB	U	3.18	pg/g	3.18
76842-07-4	122-PeCB	U	3.18	pg/g	3.18
65510-44-3	123-PeCB	U	3.18	pg/g	3.18
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	3.18	pg/g	3.18
39635-33-1	127-PeCB	U	3.18	pg/g	3.18
38380-07-3	128-HxCB	C	15.9	pg/g	6.35

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535006  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 01:35  
**Data File:** c27oct17a-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 58.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	C	117	pg/g	9.53
52663-66-8	130-HxCB		6.87	pg/g	3.18
61798-70-7	131-HxCB	U	3.18	pg/g	3.18
38380-05-1	132-HxCB		21.5	pg/g	3.18
35694-04-3	133-HxCB	U	3.18	pg/g	3.18
52704-70-8	134-HxCB		5.23	pg/g	3.18
52744-13-5	135-HxCB	C	31.6	pg/g	6.35
38411-22-2	136-HxCB		12.8	pg/g	3.18
35694-06-5	137-HxCB	U	3.18	pg/g	3.18
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	6.35	pg/g	6.35
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB		5.83	pg/g	3.18
41411-61-4	142-HxCB	U	3.18	pg/g	3.18
68194-15-0	143-HxCB	U	3.18	pg/g	3.18
68194-14-9	144-HxCB	U	3.18	pg/g	3.18
74472-40-5	145-HxCB	U	3.18	pg/g	3.18
51908-16-8	146-HxCB		25.0	pg/g	3.18
68194-13-8	147-HxCB	C	88.5	pg/g	6.35
74472-41-6	148-HxCB	U	3.18	pg/g	3.18
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	3.18	pg/g	3.18
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	3.18	pg/g	3.18
35065-27-1	153-HxCB	C	137	pg/g	6.35
60145-22-4	154-HxCB		11.4	pg/g	3.18
33979-03-2	155-HxCB	U	3.18	pg/g	3.18
38380-08-4	156-HxCB	C	11.8	pg/g	6.35
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB		6.69	pg/g	3.18
39635-35-3	159-HxCB	U	3.18	pg/g	3.18
41411-62-5	160-HxCB	U	3.18	pg/g	3.18

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535006  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 01:35  
**Data File:** c27oct17a-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 58.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	3.18	pg/g	3.18
39635-34-2	162-HxCB	U	3.18	pg/g	3.18
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB		4.56	pg/g	3.18
74472-46-1	165-HxCB	U	3.18	pg/g	3.18
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	3.18	pg/g	3.18
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	3.18	pg/g	3.18
35065-30-6	170-HpCB		18.5	pg/g	3.18
52663-71-5	171-HpCB	C	6.98	pg/g	6.35
52663-74-8	172-HpCB		4.22	pg/g	3.18
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB		11.7	pg/g	3.18
40186-70-7	175-HpCB	U	3.18	pg/g	3.18
52663-65-7	176-HpCB	U	3.18	pg/g	3.18
52663-70-4	177-HpCB		17.9	pg/g	3.18
52663-67-9	178-HpCB		10.1	pg/g	3.18
52663-64-6	179-HpCB		14.9	pg/g	3.18
35065-29-3	180-HpCB	C	40.9	pg/g	6.35
74472-47-2	181-HpCB	U	3.18	pg/g	3.18
60145-23-5	182-HpCB	U	3.18	pg/g	3.18
52663-69-1	183-HpCB	C	16.8	pg/g	6.35
74472-48-3	184-HpCB	U	3.18	pg/g	3.18
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	3.18	pg/g	3.18
52663-68-0	187-HpCB		61.5	pg/g	3.18
74487-85-7	188-HpCB		3.32	pg/g	3.18
39635-31-9	189-HpCB	U	3.18	pg/g	3.18
41411-64-7	190-HpCB	U	3.18	pg/g	3.18
74472-50-7	191-HpCB	U	3.18	pg/g	3.18
74472-51-8	192-HpCB	U	3.18	pg/g	3.18

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535006	<b>Date Collected:</b> 10/06/2017 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 58.1
<b>Client ID:</b> VC-IRB-05-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 01:35	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.01 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB		14.5	pg/g	3.18
52663-78-2	195-OcCB		3.85	pg/g	3.18
42740-50-1	196-OcCB		11.4	pg/g	3.18
33091-17-7	197-OcCB	CU	6.35	pg/g	6.35
68194-17-2	198-OcCB	C	26.8	pg/g	6.35
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB		9.94	pg/g	3.18
2136-99-4	202-OcCB		16.2	pg/g	3.18
52663-76-0	203-OcCB		7.76	pg/g	3.18
74472-52-9	204-OcCB	U	3.18	pg/g	3.18
74472-53-0	205-OcCB	U	3.18	pg/g	3.18
40186-72-9	206-NoCB		31.5	pg/g	3.18
52663-79-3	207-NoCB		7.15	pg/g	3.18
52663-77-1	208-NoCB		25.0	pg/g	3.18
2051-24-3	209-DeCB		36.1	pg/g	3.18
1336-36-3	Total PCB Congeners		2310	pg/g	3.18

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		102	318	pg/g	32.2	(15%-150%)
13C-3-MoCB		118	318	pg/g	37.1	(15%-150%)
13C-4-DiCB		128	318	pg/g	40.4	(25%-150%)
13C-15-DiCB		182	318	pg/g	57.2	(25%-150%)
13C-19-TrCB		160	318	pg/g	50.3	(25%-150%)
13C-37-TrCB		156	318	pg/g	49.1	(25%-150%)
13C-54-TeCB		149	318	pg/g	46.9	(25%-150%)
13C-77-TeCB		169	318	pg/g	53.3	(25%-150%)
13C-81-TeCB		152	318	pg/g	47.9	(25%-150%)
13C-104-PeCB		198	318	pg/g	62.2	(25%-150%)
13C-105-PeCB		156	318	pg/g	49.2	(25%-150%)
13C-114-PeCB		160	318	pg/g	50.4	(25%-150%)
13C-118-PeCB		163	318	pg/g	51.4	(25%-150%)
13C-123-PeCB		168	318	pg/g	52.8	(25%-150%)
13C-126-PeCB		154	318	pg/g	48.4	(25%-150%)
13C-155-HxCB		184	318	pg/g	58.0	(25%-150%)
13C-156-HxCB	C	299	635	pg/g	47.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		155	318	pg/g	48.7	(25%-150%)
13C-169-HxCB		140	318	pg/g	44.0	(25%-150%)
13C-188-HpCB		221	318	pg/g	69.6	(25%-150%)
13C-189-HpCB		152	318	pg/g	47.9	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535006	<b>Date Collected:</b> 10/06/2017 19:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 58.1
<b>Client ID:</b> VC-IRB-05-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 01:35	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.01 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			212	318	pg/g	66.8 (25%-150%)
13C-205-OcCB			189	318	pg/g	59.5 (25%-150%)
13C-206-NoCB			209	318	pg/g	65.9 (25%-150%)
13C-208-NoCB			213	318	pg/g	67.2 (25%-150%)
13C-209-DeCB			186	318	pg/g	58.6 (25%-150%)
13C-111-PeCB			267	318	pg/g	84.0 (30%-135%)
13C-28-TrCB			219	318	pg/g	69.1 (30%-135%)
13C-178-HpCB			337	318	pg/g	106 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535007  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S2  
**Batch ID:** 36009  
**Run Date:** 10/31/2017 16:36  
**Data File:** c31oct17a-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.07 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 84.7  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	8.7	pg/g	8.70
2051-61-8	2-MoCB	U	8.7	pg/g	8.70
2051-62-9	3-MoCB	U	8.7	pg/g	8.70
13029-08-8	4-DiCB	U	8.7	pg/g	8.70
16605-91-7	5-DiCB	U	8.7	pg/g	8.70
25569-80-6	6-DiCB	U	8.7	pg/g	8.70
33284-50-3	7-DiCB	U	8.7	pg/g	8.70
34883-43-7	8-DiCB	U	8.7	pg/g	8.70
34883-39-1	9-DiCB	U	8.7	pg/g	8.70
33146-45-1	10-DiCB	U	8.7	pg/g	8.70
2050-67-1	11-DiCB	U	8.7	pg/g	87.0
2974-92-7	12-DiCB	CU	17.4	pg/g	17.4
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	8.7	pg/g	8.70
2050-68-2	15-DiCB	U	8.7	pg/g	8.70
38444-78-9	16-TrCB	U	8.7	pg/g	8.70
37680-66-3	17-TrCB	U	8.7	pg/g	8.70
37680-65-2	18-TrCB	CU	17.4	pg/g	17.4
38444-73-4	19-TrCB	U	8.7	pg/g	8.70
38444-84-7	20-TrCB	CU	17.4	pg/g	17.4
55702-46-0	21-TrCB	CU	17.4	pg/g	17.4
38444-85-8	22-TrCB	U	8.7	pg/g	8.70
55720-44-0	23-TrCB	U	8.7	pg/g	8.70
55702-45-9	24-TrCB	U	8.7	pg/g	8.70
55712-37-3	25-TrCB	U	8.7	pg/g	8.70
38444-81-4	26-TrCB	CU	17.4	pg/g	17.4
38444-76-7	27-TrCB	U	8.7	pg/g	8.70
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	8.7	pg/g	8.70
38444-77-8	32-TrCB	U	8.7	pg/g	8.70

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535007  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S2  
**Batch ID:** 36009  
**Run Date:** 10/31/2017 16:36  
**Data File:** c31oct17a-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.07 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 84.7  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	8.7	pg/g	8.70
37680-69-6	35-TrCB	U	8.7	pg/g	8.70
38444-87-0	36-TrCB	U	8.7	pg/g	8.70
38444-90-5	37-TrCB	U	8.7	pg/g	8.70
53555-66-1	38-TrCB	U	8.7	pg/g	8.70
38444-88-1	39-TrCB	U	8.7	pg/g	8.70
38444-93-8	40-TeCB	CU	17.4	pg/g	17.4
52663-59-9	41-TeCB	U	8.7	pg/g	8.70
36559-22-5	42-TeCB	U	8.7	pg/g	8.70
70362-46-8	43-TeCB	U	8.7	pg/g	8.70
41464-39-5	44-TeCB	CU	26.1	pg/g	26.1
70362-45-7	45-TeCB	CU	17.4	pg/g	17.4
41464-47-5	46-TeCB	U	8.7	pg/g	8.70
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	8.7	pg/g	8.70
41464-40-8	49-TeCB	CU	17.4	pg/g	17.4
62796-65-0	50-TeCB	CU	17.4	pg/g	17.4
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	8.7	pg/g	8.70
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	8.7	pg/g	8.70
74338-24-2	55-TeCB	U	8.7	pg/g	8.70
41464-43-1	56-TeCB	U	8.7	pg/g	8.70
70424-67-8	57-TeCB	U	8.7	pg/g	8.70
41464-49-7	58-TeCB	U	8.7	pg/g	8.70
74472-33-6	59-TeCB	CU	26.1	pg/g	26.1
33025-41-1	60-TeCB	U	8.7	pg/g	8.70
33284-53-6	61-TeCB	CU	34.8	pg/g	34.8
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	8.7	pg/g	8.70
52663-58-8	64-TeCB	U	8.7	pg/g	8.70

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535007	<b>Date Collected:</b> 10/06/2017 19:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84.7
<b>Client ID:</b> VC-IRB-05-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/31/2017 16:36	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c31oct17a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	8.7	pg/g	8.70
73575-53-8	67-TeCB	U	8.7	pg/g	8.70
73575-52-7	68-TeCB	U	8.7	pg/g	8.70
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	8.7	pg/g	8.70
74338-23-1	73-TeCB	U	8.7	pg/g	8.70
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	8.7	pg/g	8.70
70362-49-1	78-TeCB	U	8.7	pg/g	8.70
41464-48-6	79-TeCB	U	8.7	pg/g	8.70
33284-52-5	80-TeCB	U	8.7	pg/g	8.70
70362-50-4	81-TeCB	U	8.7	pg/g	8.70
52663-62-4	82-PeCB	U	8.7	pg/g	8.70
60145-20-2	83-PeCB	U	8.7	pg/g	8.70
52663-60-2	84-PeCB	U	8.7	pg/g	8.70
65510-45-4	85-PeCB	CU	26.1	pg/g	26.1
55312-69-1	86-PeCB	CU	52.2	pg/g	52.2
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	17.4	pg/g	17.4
73575-57-2	89-PeCB	U	8.7	pg/g	8.70
68194-07-0	90-PeCB	CU	26.1	pg/g	26.1
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	8.7	pg/g	8.70
73575-56-1	93-PeCB	CU	17.4	pg/g	17.4
73575-55-0	94-PeCB	U	8.7	pg/g	8.70
38379-99-6	95-PeCB	U	8.7	pg/g	8.70
73575-54-9	96-PeCB	U	8.7	pg/g	8.70

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535007  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S2  
**Batch ID:** 36009  
**Run Date:** 10/31/2017 16:36  
**Data File:** c31oct17a-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:40  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.07 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 84.7  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	17.4	pg/g	17.4
38380-01-7	99-PeCB	U	8.7	pg/g	8.70
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	8.7	pg/g	8.70
56558-16-8	104-PeCB	U	8.7	pg/g	8.70
32598-14-4	105-PeCB	U	8.7	pg/g	8.70
70424-69-0	106-PeCB	U	8.7	pg/g	8.70
70424-68-9	107-PeCB	U	8.7	pg/g	8.70
70362-41-3	108-PeCB	CU	17.4	pg/g	17.4
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	17.4	pg/g	17.4
39635-32-0	111-PeCB	U	8.7	pg/g	8.70
74472-36-9	112-PeCB	U	8.7	pg/g	8.70
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	8.7	pg/g	8.70
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	8.7	pg/g	8.70
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	8.7	pg/g	8.70
56558-18-0	121-PeCB	U	8.7	pg/g	8.70
76842-07-4	122-PeCB	U	8.7	pg/g	8.70
65510-44-3	123-PeCB	U	8.7	pg/g	8.70
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	8.7	pg/g	8.70
39635-33-1	127-PeCB	U	8.7	pg/g	8.70
38380-07-3	128-HxCB	CU	17.4	pg/g	17.4

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535007  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S2  
**Batch ID:** 36009  
**Run Date:** 10/31/2017 16:36  
**Data File:** c31oct17a-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:40  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.07 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 84.7  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	26.1	pg/g	26.1
52663-66-8	130-HxCB	U	8.7	pg/g	8.70
61798-70-7	131-HxCB	U	8.7	pg/g	8.70
38380-05-1	132-HxCB	U	8.7	pg/g	8.70
35694-04-3	133-HxCB	U	8.7	pg/g	8.70
52704-70-8	134-HxCB	U	8.7	pg/g	8.70
52744-13-5	135-HxCB	CU	17.4	pg/g	17.4
38411-22-2	136-HxCB	U	8.7	pg/g	8.70
35694-06-5	137-HxCB	U	8.7	pg/g	8.70
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	17.4	pg/g	17.4
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	8.7	pg/g	8.70
41411-61-4	142-HxCB	U	8.7	pg/g	8.70
68194-15-0	143-HxCB	U	8.7	pg/g	8.70
68194-14-9	144-HxCB	U	8.7	pg/g	8.70
74472-40-5	145-HxCB	U	8.7	pg/g	8.70
51908-16-8	146-HxCB	U	8.7	pg/g	8.70
68194-13-8	147-HxCB	CU	17.4	pg/g	17.4
74472-41-6	148-HxCB	U	8.7	pg/g	8.70
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	8.7	pg/g	8.70
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	8.7	pg/g	8.70
35065-27-1	153-HxCB	CU	17.4	pg/g	17.4
60145-22-4	154-HxCB	U	8.7	pg/g	8.70
33979-03-2	155-HxCB	U	8.7	pg/g	8.70
38380-08-4	156-HxCB	CU	17.4	pg/g	17.4
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	8.7	pg/g	8.70
39635-35-3	159-HxCB	U	8.7	pg/g	8.70
41411-62-5	160-HxCB	U	8.7	pg/g	8.70

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535007  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-05-S2  
**Batch ID:** 36009  
**Run Date:** 10/31/2017 16:36  
**Data File:** c31oct17a-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 19:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.07 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 84.7  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	8.7	pg/g	8.70
39635-34-2	162-HxCB	U	8.7	pg/g	8.70
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	8.7	pg/g	8.70
74472-46-1	165-HxCB	U	8.7	pg/g	8.70
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	8.7	pg/g	8.70
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	8.7	pg/g	8.70
35065-30-6	170-HpCB	U	8.7	pg/g	8.70
52663-71-5	171-HpCB	CU	17.4	pg/g	17.4
52663-74-8	172-HpCB	U	8.7	pg/g	8.70
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	8.7	pg/g	8.70
40186-70-7	175-HpCB	U	8.7	pg/g	8.70
52663-65-7	176-HpCB	U	8.7	pg/g	8.70
52663-70-4	177-HpCB	U	8.7	pg/g	8.70
52663-67-9	178-HpCB	U	8.7	pg/g	8.70
52663-64-6	179-HpCB	U	8.7	pg/g	8.70
35065-29-3	180-HpCB	CU	17.4	pg/g	17.4
74472-47-2	181-HpCB	U	8.7	pg/g	8.70
60145-23-5	182-HpCB	U	8.7	pg/g	8.70
52663-69-1	183-HpCB	CU	17.4	pg/g	17.4
74472-48-3	184-HpCB	U	8.7	pg/g	8.70
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	8.7	pg/g	8.70
52663-68-0	187-HpCB	U	8.7	pg/g	8.70
74487-85-7	188-HpCB	U	8.7	pg/g	8.70
39635-31-9	189-HpCB	U	8.7	pg/g	8.70
41411-64-7	190-HpCB	U	8.7	pg/g	8.70
74472-50-7	191-HpCB	U	8.7	pg/g	8.70
74472-51-8	192-HpCB	U	8.7	pg/g	8.70

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535007	<b>Date Collected:</b> 10/06/2017 19:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84.7
<b>Client ID:</b> VC-IRB-05-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/31/2017 16:36	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c31oct17a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	8.7	pg/g	8.70
52663-78-2	195-OcCB	U	8.7	pg/g	8.70
42740-50-1	196-OcCB	U	8.7	pg/g	8.70
33091-17-7	197-OcCB	CU	17.4	pg/g	17.4
68194-17-2	198-OcCB	CU	17.4	pg/g	17.4
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	8.7	pg/g	8.70
2136-99-4	202-OcCB	U	8.7	pg/g	8.70
52663-76-0	203-OcCB	U	8.7	pg/g	8.70
74472-52-9	204-OcCB	U	8.7	pg/g	8.70
74472-53-0	205-OcCB	U	8.7	pg/g	8.70
40186-72-9	206-NoCB	U	8.7	pg/g	8.70
52663-79-3	207-NoCB	U	8.7	pg/g	8.70
52663-77-1	208-NoCB	U	8.7	pg/g	8.70
2051-24-3	209-DeCB	U	8.7	pg/g	8.70
1336-36-3	Total PCB Congeners	U	8.7	pg/g	8.70

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		208	870	pg/g	23.9	(15%-150%)
13C-3-MoCB		251	870	pg/g	28.8	(15%-150%)
13C-4-DiCB		268	870	pg/g	30.8	(25%-150%)
13C-15-DiCB		458	870	pg/g	52.6	(25%-150%)
13C-19-TrCB		389	870	pg/g	44.7	(25%-150%)
13C-37-TrCB		368	870	pg/g	42.3	(25%-150%)
13C-54-TeCB		303	870	pg/g	34.8	(25%-150%)
13C-77-TeCB		327	870	pg/g	37.6	(25%-150%)
13C-81-TeCB		541	870	pg/g	62.2	(25%-150%)
13C-104-PeCB		379	870	pg/g	43.6	(25%-150%)
13C-105-PeCB		430	870	pg/g	49.4	(25%-150%)
13C-114-PeCB		412	870	pg/g	47.3	(25%-150%)
13C-118-PeCB		386	870	pg/g	44.3	(25%-150%)
13C-123-PeCB		444	870	pg/g	51.0	(25%-150%)
13C-126-PeCB		417	870	pg/g	47.9	(25%-150%)
13C-155-HxCB		386	870	pg/g	44.3	(25%-150%)
13C-156-HxCB	C	557	1740	pg/g	32.0	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		385	870	pg/g	44.2	(25%-150%)
13C-169-HxCB		134	870	pg/g	15.4 *	(25%-150%)
13C-188-HpCB		520	870	pg/g	59.7	(25%-150%)
13C-189-HpCB		335	870	pg/g	38.4	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535007	<b>Date Collected:</b> 10/06/2017 19:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84.7
<b>Client ID:</b> VC-IRB-05-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/31/2017 16:36	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c31oct17a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-202-OcCB			570	870	pg/g	65.5 (25%-150%)
13C-205-OcCB			434	870	pg/g	49.8 (25%-150%)
13C-206-NoCB			474	870	pg/g	54.5 (25%-150%)
13C-208-NoCB			513	870	pg/g	58.9 (25%-150%)
13C-209-DeCB			579	870	pg/g	66.6 (25%-150%)
13C-111-PeCB			509	870	pg/g	58.5 (30%-135%)
13C-28-TrCB			589	870	pg/g	67.7 (30%-135%)
13C-178-HpCB			615	870	pg/g	70.7 (30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535008  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-06  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 06:14  
**Data File:** c27oct17a\_2-3  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 20:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.1 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 65.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		3.94	pg/g	3.87
2051-61-8	2-MoCB		6.10	pg/g	3.87
2051-62-9	3-MoCB	U	3.87	pg/g	3.87
13029-08-8	4-DiCB		6.95	pg/g	3.87
16605-91-7	5-DiCB	U	3.87	pg/g	3.87
25569-80-6	6-DiCB	U	3.87	pg/g	3.87
33284-50-3	7-DiCB	U	3.87	pg/g	3.87
34883-43-7	8-DiCB		5.85	pg/g	3.87
34883-39-1	9-DiCB	U	3.87	pg/g	3.87
33146-45-1	10-DiCB	U	3.87	pg/g	3.87
2050-67-1	11-DiCB	U	38.7	pg/g	38.7
2974-92-7	12-DiCB	CU	7.75	pg/g	7.75
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	3.87	pg/g	3.87
2050-68-2	15-DiCB		8.79	pg/g	3.87
38444-78-9	16-TrCB	U	3.87	pg/g	3.87
37680-66-3	17-TrCB	U	3.87	pg/g	3.87
37680-65-2	18-TrCB	CU	7.75	pg/g	7.75
38444-73-4	19-TrCB	U	3.87	pg/g	3.87
38444-84-7	20-TrCB	C	12.7	pg/g	7.75
55702-46-0	21-TrCB	CU	7.75	pg/g	7.75
38444-85-8	22-TrCB	U	3.87	pg/g	3.87
55720-44-0	23-TrCB	U	3.87	pg/g	3.87
55702-45-9	24-TrCB	U	3.87	pg/g	3.87
55712-37-3	25-TrCB	U	3.87	pg/g	3.87
38444-81-4	26-TrCB	CU	7.75	pg/g	7.75
38444-76-7	27-TrCB	U	3.87	pg/g	3.87
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		7.47	pg/g	3.87
38444-77-8	32-TrCB	U	3.87	pg/g	3.87

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535008  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-06  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 06:14  
**Data File:** c27oct17a\_2-3  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 20:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.1 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 65.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	3.87	pg/g	3.87
37680-69-6	35-TrCB	U	3.87	pg/g	3.87
38444-87-0	36-TrCB	U	3.87	pg/g	3.87
38444-90-5	37-TrCB		5.71	pg/g	3.87
53555-66-1	38-TrCB	U	3.87	pg/g	3.87
38444-88-1	39-TrCB	U	3.87	pg/g	3.87
38444-93-8	40-TeCB	CU	7.75	pg/g	7.75
52663-59-9	41-TeCB	U	3.87	pg/g	3.87
36559-22-5	42-TeCB	U	3.87	pg/g	3.87
70362-46-8	43-TeCB	U	3.87	pg/g	3.87
41464-39-5	44-TeCB	CU	11.6	pg/g	11.6
70362-45-7	45-TeCB	CU	7.75	pg/g	7.75
41464-47-5	46-TeCB	U	3.87	pg/g	3.87
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	3.87	pg/g	3.87
41464-40-8	49-TeCB	CU	7.75	pg/g	7.75
62796-65-0	50-TeCB	CU	7.75	pg/g	7.75
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		6.49	pg/g	3.87
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	3.87	pg/g	3.87
74338-24-2	55-TeCB	U	3.87	pg/g	3.87
41464-43-1	56-TeCB	U	3.87	pg/g	3.87
70424-67-8	57-TeCB	U	3.87	pg/g	3.87
41464-49-7	58-TeCB	U	3.87	pg/g	3.87
74472-33-6	59-TeCB	CU	11.6	pg/g	11.6
33025-41-1	60-TeCB	U	3.87	pg/g	3.87
33284-53-6	61-TeCB	CU	15.5	pg/g	15.5
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	3.87	pg/g	3.87
52663-58-8	64-TeCB	U	3.87	pg/g	3.87

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535008  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-06  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 06:14  
**Data File:** c27oct17a\_2-3  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 20:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.1 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 65.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		11.2	pg/g	3.87
73575-53-8	67-TeCB	U	3.87	pg/g	3.87
73575-52-7	68-TeCB	U	3.87	pg/g	3.87
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	3.87	pg/g	3.87
74338-23-1	73-TeCB	U	3.87	pg/g	3.87
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	3.87	pg/g	3.87
70362-49-1	78-TeCB	U	3.87	pg/g	3.87
41464-48-6	79-TeCB	U	3.87	pg/g	3.87
33284-52-5	80-TeCB	U	3.87	pg/g	3.87
70362-50-4	81-TeCB	U	3.87	pg/g	3.87
52663-62-4	82-PeCB	U	3.87	pg/g	3.87
60145-20-2	83-PeCB	U	3.87	pg/g	3.87
52663-60-2	84-PeCB	U	3.87	pg/g	3.87
65510-45-4	85-PeCB	CU	11.6	pg/g	11.6
55312-69-1	86-PeCB	CU	23.2	pg/g	23.2
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	7.75	pg/g	7.75
73575-57-2	89-PeCB	U	3.87	pg/g	3.87
68194-07-0	90-PeCB	CU	11.6	pg/g	11.6
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	3.87	pg/g	3.87
73575-56-1	93-PeCB	CU	7.75	pg/g	7.75
73575-55-0	94-PeCB	U	3.87	pg/g	3.87
38379-99-6	95-PeCB	U	3.87	pg/g	3.87
73575-54-9	96-PeCB	U	3.87	pg/g	3.87

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535008  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-06  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 06:14  
**Data File:** c27oct17a\_2-3  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 20:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.1 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 65.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	7.75	pg/g	7.75
38380-01-7	99-PeCB	U	3.87	pg/g	3.87
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	3.87	pg/g	3.87
56558-16-8	104-PeCB	U	3.87	pg/g	3.87
32598-14-4	105-PeCB	U	3.87	pg/g	3.87
70424-69-0	106-PeCB	U	3.87	pg/g	3.87
70424-68-9	107-PeCB	U	3.87	pg/g	3.87
70362-41-3	108-PeCB	CU	7.75	pg/g	7.75
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	7.75	pg/g	7.75
39635-32-0	111-PeCB	U	3.87	pg/g	3.87
74472-36-9	112-PeCB	U	3.87	pg/g	3.87
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	3.87	pg/g	3.87
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		11.2	pg/g	3.87
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	3.87	pg/g	3.87
56558-18-0	121-PeCB	U	3.87	pg/g	3.87
76842-07-4	122-PeCB	U	3.87	pg/g	3.87
65510-44-3	123-PeCB	U	3.87	pg/g	3.87
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	3.87	pg/g	3.87
39635-33-1	127-PeCB	U	3.87	pg/g	3.87
38380-07-3	128-HxCB	CU	7.75	pg/g	7.75

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535008  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-06  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 06:14  
**Data File:** c27oct17a\_2-3  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 20:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.1 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 65.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	11.6	pg/g	11.6
52663-66-8	130-HxCB	U	3.87	pg/g	3.87
61798-70-7	131-HxCB	U	3.87	pg/g	3.87
38380-05-1	132-HxCB	U	3.87	pg/g	3.87
35694-04-3	133-HxCB	U	3.87	pg/g	3.87
52704-70-8	134-HxCB	U	3.87	pg/g	3.87
52744-13-5	135-HxCB	CU	7.75	pg/g	7.75
38411-22-2	136-HxCB	U	3.87	pg/g	3.87
35694-06-5	137-HxCB	U	3.87	pg/g	3.87
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	7.75	pg/g	7.75
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	3.87	pg/g	3.87
41411-61-4	142-HxCB	U	3.87	pg/g	3.87
68194-15-0	143-HxCB	U	3.87	pg/g	3.87
68194-14-9	144-HxCB	U	3.87	pg/g	3.87
74472-40-5	145-HxCB	U	3.87	pg/g	3.87
51908-16-8	146-HxCB	U	3.87	pg/g	3.87
68194-13-8	147-HxCB	C	8.04	pg/g	7.75
74472-41-6	148-HxCB	U	3.87	pg/g	3.87
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	3.87	pg/g	3.87
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	3.87	pg/g	3.87
35065-27-1	153-HxCB	C	12.0	pg/g	7.75
60145-22-4	154-HxCB	U	3.87	pg/g	3.87
33979-03-2	155-HxCB	U	3.87	pg/g	3.87
38380-08-4	156-HxCB	CU	7.75	pg/g	7.75
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	3.87	pg/g	3.87
39635-35-3	159-HxCB	U	3.87	pg/g	3.87
41411-62-5	160-HxCB	U	3.87	pg/g	3.87

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535008  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-06  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 06:14  
**Data File:** c27oct17a\_2-3  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 20:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.1 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 65.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	3.87	pg/g	3.87
39635-34-2	162-HxCB	U	3.87	pg/g	3.87
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	3.87	pg/g	3.87
74472-46-1	165-HxCB	U	3.87	pg/g	3.87
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	3.87	pg/g	3.87
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	3.87	pg/g	3.87
35065-30-6	170-HpCB	U	3.87	pg/g	3.87
52663-71-5	171-HpCB	CU	7.75	pg/g	7.75
52663-74-8	172-HpCB	U	3.87	pg/g	3.87
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	3.87	pg/g	3.87
40186-70-7	175-HpCB	U	3.87	pg/g	3.87
52663-65-7	176-HpCB	U	3.87	pg/g	3.87
52663-70-4	177-HpCB	U	3.87	pg/g	3.87
52663-67-9	178-HpCB	U	3.87	pg/g	3.87
52663-64-6	179-HpCB	U	3.87	pg/g	3.87
35065-29-3	180-HpCB	CU	7.75	pg/g	7.75
74472-47-2	181-HpCB	U	3.87	pg/g	3.87
60145-23-5	182-HpCB	U	3.87	pg/g	3.87
52663-69-1	183-HpCB	CU	7.75	pg/g	7.75
74472-48-3	184-HpCB	U	3.87	pg/g	3.87
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	3.87	pg/g	3.87
52663-68-0	187-HpCB		8.68	pg/g	3.87
74487-85-7	188-HpCB	U	3.87	pg/g	3.87
39635-31-9	189-HpCB	U	3.87	pg/g	3.87
41411-64-7	190-HpCB	U	3.87	pg/g	3.87
74472-50-7	191-HpCB	U	3.87	pg/g	3.87
74472-51-8	192-HpCB	U	3.87	pg/g	3.87

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535008	<b>Date Collected:</b> 10/06/2017 20:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 65.8
<b>Client ID:</b> VC-IRB-06		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 06:14	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.1 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB		3.98	pg/g	3.87
52663-78-2	195-OcCB	U	3.87	pg/g	3.87
42740-50-1	196-OcCB	U	3.87	pg/g	3.87
33091-17-7	197-OcCB	CU	7.75	pg/g	7.75
68194-17-2	198-OcCB	CU	7.75	pg/g	7.75
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	3.87	pg/g	3.87
2136-99-4	202-OcCB	U	3.87	pg/g	3.87
52663-76-0	203-OcCB		4.26	pg/g	3.87
74472-52-9	204-OcCB	U	3.87	pg/g	3.87
74472-53-0	205-OcCB	U	3.87	pg/g	3.87
40186-72-9	206-NoCB		9.00	pg/g	3.87
52663-79-3	207-NoCB	U	3.87	pg/g	3.87
52663-77-1	208-NoCB	U	3.87	pg/g	3.87
2051-24-3	209-DeCB		7.51	pg/g	3.87
1336-36-3	Total PCB Congeners		140	pg/g	3.87

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		104	387	pg/g	26.8	(15%-150%)
13C-3-MoCB		110	387	pg/g	28.3	(15%-150%)
13C-4-DiCB		114	387	pg/g	29.4	(25%-150%)
13C-15-DiCB		155	387	pg/g	40.0	(25%-150%)
13C-19-TrCB		143	387	pg/g	36.9	(25%-150%)
13C-37-TrCB		128	387	pg/g	33.0	(25%-150%)
13C-54-TeCB		115	387	pg/g	29.8	(25%-150%)
13C-77-TeCB		141	387	pg/g	36.3	(25%-150%)
13C-81-TeCB		140	387	pg/g	36.1	(25%-150%)
13C-104-PeCB		155	387	pg/g	40.0	(25%-150%)
13C-105-PeCB		124	387	pg/g	32.0	(25%-150%)
13C-114-PeCB		128	387	pg/g	33.1	(25%-150%)
13C-118-PeCB		130	387	pg/g	33.6	(25%-150%)
13C-123-PeCB		133	387	pg/g	34.2	(25%-150%)
13C-126-PeCB		116	387	pg/g	30.0	(25%-150%)
13C-155-HxCB		149	387	pg/g	38.5	(25%-150%)
13C-156-HxCB	C	232	775	pg/g	30.0	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		122	387	pg/g	31.5	(25%-150%)
13C-169-HxCB		108	387	pg/g	27.8	(25%-150%)
13C-188-HpCB		177	387	pg/g	45.7	(25%-150%)
13C-189-HpCB		123	387	pg/g	31.8	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535008	<b>Date Collected:</b> 10/06/2017 20:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 65.8
<b>Client ID:</b> VC-IRB-06		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 06:14	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.1 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			168	387	pg/g	43.3 (25%-150%)
13C-205-OcCB			148	387	pg/g	38.3 (25%-150%)
13C-206-NoCB			166	387	pg/g	42.9 (25%-150%)
13C-208-NoCB			172	387	pg/g	44.5 (25%-150%)
13C-209-DeCB			198	387	pg/g	51.2 (25%-150%)
13C-111-PeCB			273	387	pg/g	70.3 (30%-135%)
13C-28-TrCB			214	387	pg/g	55.1 (30%-135%)
13C-178-HpCB			338	387	pg/g	87.2 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535009  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-07-ALT-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 07:21  
**Data File:** c27oct17a\_2-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 19:00  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.12 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 62.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		8.89	pg/g	3.49
2051-61-8	2-MoCB		21.7	pg/g	3.49
2051-62-9	3-MoCB		9.97	pg/g	3.49
13029-08-8	4-DiCB		19.1	pg/g	3.49
16605-91-7	5-DiCB	U	3.49	pg/g	3.49
25569-80-6	6-DiCB		8.67	pg/g	3.49
33284-50-3	7-DiCB	U	3.49	pg/g	3.49
34883-43-7	8-DiCB		33.4	pg/g	3.49
34883-39-1	9-DiCB	U	3.49	pg/g	3.49
33146-45-1	10-DiCB	U	3.49	pg/g	3.49
2050-67-1	11-DiCB		91.8	pg/g	34.9
2974-92-7	12-DiCB	C	15.7	pg/g	6.97
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	3.49	pg/g	3.49
2050-68-2	15-DiCB		69.2	pg/g	3.49
38444-78-9	16-TrCB		7.57	pg/g	3.49
37680-66-3	17-TrCB		16.8	pg/g	3.49
37680-65-2	18-TrCB	C	19.9	pg/g	6.97
38444-73-4	19-TrCB	U	3.49	pg/g	3.49
38444-84-7	20-TrCB	C	100	pg/g	6.97
55702-46-0	21-TrCB	C	23.3	pg/g	6.97
38444-85-8	22-TrCB		18.1	pg/g	3.49
55720-44-0	23-TrCB	U	3.49	pg/g	3.49
55702-45-9	24-TrCB	U	3.49	pg/g	3.49
55712-37-3	25-TrCB		9.65	pg/g	3.49
38444-81-4	26-TrCB	C	14.7	pg/g	6.97
38444-76-7	27-TrCB	U	3.49	pg/g	3.49
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		54.7	pg/g	3.49
38444-77-8	32-TrCB		14.3	pg/g	3.49

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535009	<b>Date Collected:</b> 10/07/2017 19:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-07-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 07:21	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.12 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	3.49	pg/g	3.49
37680-69-6	35-TrCB		10.6	pg/g	3.49
38444-87-0	36-TrCB	U	3.49	pg/g	3.49
38444-90-5	37-TrCB		44.2	pg/g	3.49
53555-66-1	38-TrCB	U	3.49	pg/g	3.49
38444-88-1	39-TrCB	U	3.49	pg/g	3.49
38444-93-8	40-TeCB	C	18.4	pg/g	6.97
52663-59-9	41-TeCB	U	3.49	pg/g	3.49
36559-22-5	42-TeCB		15.4	pg/g	3.49
70362-46-8	43-TeCB	U	3.49	pg/g	3.49
41464-39-5	44-TeCB	C	56.9	pg/g	10.5
70362-45-7	45-TeCB	C	9.20	pg/g	6.97
41464-47-5	46-TeCB	U	3.49	pg/g	3.49
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB		7.24	pg/g	3.49
41464-40-8	49-TeCB	C	46.3	pg/g	6.97
62796-65-0	50-TeCB	CU	6.97	pg/g	6.97
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		40.0	pg/g	3.49
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	3.49	pg/g	3.49
74338-24-2	55-TeCB	U	3.49	pg/g	3.49
41464-43-1	56-TeCB		32.1	pg/g	3.49
70424-67-8	57-TeCB	U	3.49	pg/g	3.49
41464-49-7	58-TeCB	U	3.49	pg/g	3.49
74472-33-6	59-TeCB	CU	10.5	pg/g	10.5
33025-41-1	60-TeCB		10.2	pg/g	3.49
33284-53-6	61-TeCB	C	107	pg/g	13.9
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	3.49	pg/g	3.49
52663-58-8	64-TeCB		14.3	pg/g	3.49

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535009	<b>Date Collected:</b> 10/07/2017 19:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-07-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 07:21	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.12 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		95.7	pg/g	3.49
73575-53-8	67-TeCB	U	3.49	pg/g	3.49
73575-52-7	68-TeCB	U	3.49	pg/g	3.49
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	3.49	pg/g	3.49
74338-23-1	73-TeCB	U	3.49	pg/g	3.49
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB		35.2	pg/g	3.49
70362-49-1	78-TeCB	U	3.49	pg/g	3.49
41464-48-6	79-TeCB	U	3.49	pg/g	3.49
33284-52-5	80-TeCB	U	3.49	pg/g	3.49
70362-50-4	81-TeCB	U	3.49	pg/g	3.49
52663-62-4	82-PeCB	U	3.49	pg/g	3.49
60145-20-2	83-PeCB	U	3.49	pg/g	3.49
52663-60-2	84-PeCB		9.68	pg/g	3.49
65510-45-4	85-PeCB	CU	10.5	pg/g	10.5
55312-69-1	86-PeCB	C	29.3	pg/g	20.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	C	14.4	pg/g	6.97
73575-57-2	89-PeCB	U	3.49	pg/g	3.49
68194-07-0	90-PeCB	C	60.5	pg/g	10.5
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB		12.1	pg/g	3.49
73575-56-1	93-PeCB	CU	6.97	pg/g	6.97
73575-55-0	94-PeCB	U	3.49	pg/g	3.49
38379-99-6	95-PeCB		29.2	pg/g	3.49
73575-54-9	96-PeCB	U	3.49	pg/g	3.49

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535009  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-07-ALT-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 07:21  
**Data File:** c27oct17a\_2-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 19:00  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.12 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 62.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	6.97	pg/g	6.97
38380-01-7	99-PeCB		69.7	pg/g	3.49
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	3.49	pg/g	3.49
56558-16-8	104-PeCB	U	3.49	pg/g	3.49
32598-14-4	105-PeCB		22.7	pg/g	3.49
70424-69-0	106-PeCB	U	3.49	pg/g	3.49
70424-68-9	107-PeCB		8.60	pg/g	3.49
70362-41-3	108-PeCB	CU	6.97	pg/g	6.97
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	C	43.6	pg/g	6.97
39635-32-0	111-PeCB	U	3.49	pg/g	3.49
74472-36-9	112-PeCB	U	3.49	pg/g	3.49
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	3.49	pg/g	3.49
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		82.2	pg/g	3.49
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	3.49	pg/g	3.49
56558-18-0	121-PeCB	U	3.49	pg/g	3.49
76842-07-4	122-PeCB	U	3.49	pg/g	3.49
65510-44-3	123-PeCB	U	3.49	pg/g	3.49
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	3.49	pg/g	3.49
39635-33-1	127-PeCB	U	3.49	pg/g	3.49
38380-07-3	128-HxCB	C	10.3	pg/g	6.97

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535009	<b>Date Collected:</b> 10/07/2017 19:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-07-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 07:21	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.12 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	C	86.9	pg/g	10.5
52663-66-8	130-HxCB		4.79	pg/g	3.49
61798-70-7	131-HxCB	U	3.49	pg/g	3.49
38380-05-1	132-HxCB		10.3	pg/g	3.49
35694-04-3	133-HxCB	U	3.49	pg/g	3.49
52704-70-8	134-HxCB		3.68	pg/g	3.49
52744-13-5	135-HxCB	C	26.2	pg/g	6.97
38411-22-2	136-HxCB		9.31	pg/g	3.49
35694-06-5	137-HxCB	U	3.49	pg/g	3.49
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	6.97	pg/g	6.97
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	3.49	pg/g	3.49
41411-61-4	142-HxCB	U	3.49	pg/g	3.49
68194-15-0	143-HxCB	U	3.49	pg/g	3.49
68194-14-9	144-HxCB	U	3.49	pg/g	3.49
74472-40-5	145-HxCB	U	3.49	pg/g	3.49
51908-16-8	146-HxCB		28.2	pg/g	3.49
68194-13-8	147-HxCB	C	69.1	pg/g	6.97
74472-41-6	148-HxCB	U	3.49	pg/g	3.49
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	3.49	pg/g	3.49
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	3.49	pg/g	3.49
35065-27-1	153-HxCB	C	108	pg/g	6.97
60145-22-4	154-HxCB		11.1	pg/g	3.49
33979-03-2	155-HxCB	U	3.49	pg/g	3.49
38380-08-4	156-HxCB	C	7.77	pg/g	6.97
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB		3.58	pg/g	3.49
39635-35-3	159-HxCB	U	3.49	pg/g	3.49
41411-62-5	160-HxCB	U	3.49	pg/g	3.49

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535009  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-07-ALT-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 07:21  
**Data File:** c27oct17a\_2-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 19:00  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.12 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 62.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	3.49	pg/g	3.49
39635-34-2	162-HxCB	U	3.49	pg/g	3.49
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	3.49	pg/g	3.49
74472-46-1	165-HxCB	U	3.49	pg/g	3.49
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB		4.04	pg/g	3.49
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	3.49	pg/g	3.49
35065-30-6	170-HpCB		14.4	pg/g	3.49
52663-71-5	171-HpCB	CU	6.97	pg/g	6.97
52663-74-8	172-HpCB	U	3.49	pg/g	3.49
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB		8.95	pg/g	3.49
40186-70-7	175-HpCB	U	3.49	pg/g	3.49
52663-65-7	176-HpCB	U	3.49	pg/g	3.49
52663-70-4	177-HpCB		15.9	pg/g	3.49
52663-67-9	178-HpCB		9.15	pg/g	3.49
52663-64-6	179-HpCB		11.5	pg/g	3.49
35065-29-3	180-HpCB	C	33.0	pg/g	6.97
74472-47-2	181-HpCB	U	3.49	pg/g	3.49
60145-23-5	182-HpCB	U	3.49	pg/g	3.49
52663-69-1	183-HpCB	C	13.5	pg/g	6.97
74472-48-3	184-HpCB	U	3.49	pg/g	3.49
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	3.49	pg/g	3.49
52663-68-0	187-HpCB		53.9	pg/g	3.49
74487-85-7	188-HpCB		3.78	pg/g	3.49
39635-31-9	189-HpCB	U	3.49	pg/g	3.49
41411-64-7	190-HpCB	U	3.49	pg/g	3.49
74472-50-7	191-HpCB	U	3.49	pg/g	3.49
74472-51-8	192-HpCB	U	3.49	pg/g	3.49

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535009	<b>Date Collected:</b> 10/07/2017 19:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-07-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 07:21	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.12 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB		15.9	pg/g	3.49
52663-78-2	195-OcCB		3.69	pg/g	3.49
42740-50-1	196-OcCB		12.1	pg/g	3.49
33091-17-7	197-OcCB	CU	6.97	pg/g	6.97
68194-17-2	198-OcCB	C	25.9	pg/g	6.97
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB		9.31	pg/g	3.49
2136-99-4	202-OcCB		15.6	pg/g	3.49
52663-76-0	203-OcCB		8.36	pg/g	3.49
74472-52-9	204-OcCB	U	3.49	pg/g	3.49
74472-53-0	205-OcCB	U	3.49	pg/g	3.49
40186-72-9	206-NoCB		38.8	pg/g	3.49
52663-79-3	207-NoCB		7.56	pg/g	3.49
52663-77-1	208-NoCB		27.1	pg/g	3.49
2051-24-3	209-DeCB		46.4	pg/g	3.49
1336-36-3	Total PCB Congeners		2240	pg/g	3.49

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		66.9	349	pg/g	19.2	(15%-150%)
13C-3-MoCB		78.8	349	pg/g	22.6	(15%-150%)
13C-4-DiCB		78.9	349	pg/g	22.6 *	(25%-150%)
13C-15-DiCB		124	349	pg/g	35.6	(25%-150%)
13C-19-TrCB		108	349	pg/g	31.0	(25%-150%)
13C-37-TrCB		113	349	pg/g	32.5	(25%-150%)
13C-54-TeCB		92.1	349	pg/g	26.4	(25%-150%)
13C-77-TeCB		136	349	pg/g	38.9	(25%-150%)
13C-81-TeCB		120	349	pg/g	34.4	(25%-150%)
13C-104-PeCB		135	349	pg/g	38.7	(25%-150%)
13C-105-PeCB		123	349	pg/g	35.4	(25%-150%)
13C-114-PeCB		129	349	pg/g	36.9	(25%-150%)
13C-118-PeCB		130	349	pg/g	37.3	(25%-150%)
13C-123-PeCB		133	349	pg/g	38.2	(25%-150%)
13C-126-PeCB		125	349	pg/g	35.8	(25%-150%)
13C-155-HxCB		136	349	pg/g	39.0	(25%-150%)
13C-156-HxCB	C	229	697	pg/g	32.8	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		128	349	pg/g	36.6	(25%-150%)
13C-169-HxCB		117	349	pg/g	33.5	(25%-150%)
13C-188-HpCB		161	349	pg/g	46.2	(25%-150%)
13C-189-HpCB		125	349	pg/g	36.0	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535009	<b>Date Collected:</b> 10/07/2017 19:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 62.1
<b>Client ID:</b> VC-IRB-07-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 07:21	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.12 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			164	349	pg/g	47.1 (25%-150%)
13C-205-OcCB			159	349	pg/g	45.6 (25%-150%)
13C-206-NoCB			187	349	pg/g	53.7 (25%-150%)
13C-208-NoCB			179	349	pg/g	51.4 (25%-150%)
13C-209-DeCB			159	349	pg/g	45.5 (25%-150%)
13C-111-PeCB			278	349	pg/g	79.6 (30%-135%)
13C-28-TrCB			215	349	pg/g	61.6 (30%-135%)
13C-178-HpCB			306	349	pg/g	87.9 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535010  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-07-ALT-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 08:28  
**Data File:** c27oct17a\_2-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 19:10  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.22 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 17.4  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.98	pg/g	1.98
2051-61-8	2-MoCB	U	1.98	pg/g	1.98
2051-62-9	3-MoCB	U	1.98	pg/g	1.98
13029-08-8	4-DiCB	U	1.98	pg/g	1.98
16605-91-7	5-DiCB	U	1.98	pg/g	1.98
25569-80-6	6-DiCB	U	1.98	pg/g	1.98
33284-50-3	7-DiCB	U	1.98	pg/g	1.98
34883-43-7	8-DiCB	U	1.98	pg/g	1.98
34883-39-1	9-DiCB	U	1.98	pg/g	1.98
33146-45-1	10-DiCB	U	1.98	pg/g	1.98
2050-67-1	11-DiCB	U	19.8	pg/g	19.8
2974-92-7	12-DiCB	CU	3.96	pg/g	3.96
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.98	pg/g	1.98
2050-68-2	15-DiCB	U	1.98	pg/g	1.98
38444-78-9	16-TrCB	U	1.98	pg/g	1.98
37680-66-3	17-TrCB	U	1.98	pg/g	1.98
37680-65-2	18-TrCB	CU	3.96	pg/g	3.96
38444-73-4	19-TrCB	U	1.98	pg/g	1.98
38444-84-7	20-TrCB	CU	3.96	pg/g	3.96
55702-46-0	21-TrCB	CU	3.96	pg/g	3.96
38444-85-8	22-TrCB	U	1.98	pg/g	1.98
55720-44-0	23-TrCB	U	1.98	pg/g	1.98
55702-45-9	24-TrCB	U	1.98	pg/g	1.98
55712-37-3	25-TrCB	U	1.98	pg/g	1.98
38444-81-4	26-TrCB	CU	3.96	pg/g	3.96
38444-76-7	27-TrCB	U	1.98	pg/g	1.98
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.98	pg/g	1.98
38444-77-8	32-TrCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535010	<b>Date Collected:</b> 10/07/2017 19:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.4
<b>Client ID:</b> VC-IRB-07-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 08:28	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.22 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.98	pg/g	1.98
37680-69-6	35-TrCB	U	1.98	pg/g	1.98
38444-87-0	36-TrCB	U	1.98	pg/g	1.98
38444-90-5	37-TrCB	U	1.98	pg/g	1.98
53555-66-1	38-TrCB	U	1.98	pg/g	1.98
38444-88-1	39-TrCB	U	1.98	pg/g	1.98
38444-93-8	40-TeCB	CU	3.96	pg/g	3.96
52663-59-9	41-TeCB	U	1.98	pg/g	1.98
36559-22-5	42-TeCB	U	1.98	pg/g	1.98
70362-46-8	43-TeCB	U	1.98	pg/g	1.98
41464-39-5	44-TeCB	CU	5.94	pg/g	5.94
70362-45-7	45-TeCB	CU	3.96	pg/g	3.96
41464-47-5	46-TeCB	U	1.98	pg/g	1.98
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.98	pg/g	1.98
41464-40-8	49-TeCB	CU	3.96	pg/g	3.96
62796-65-0	50-TeCB	CU	3.96	pg/g	3.96
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.98	pg/g	1.98
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.98	pg/g	1.98
74338-24-2	55-TeCB	U	1.98	pg/g	1.98
41464-43-1	56-TeCB	U	1.98	pg/g	1.98
70424-67-8	57-TeCB	U	1.98	pg/g	1.98
41464-49-7	58-TeCB	U	1.98	pg/g	1.98
74472-33-6	59-TeCB	CU	5.94	pg/g	5.94
33025-41-1	60-TeCB	U	1.98	pg/g	1.98
33284-53-6	61-TeCB	CU	7.93	pg/g	7.93
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.98	pg/g	1.98
52663-58-8	64-TeCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535010	<b>Date Collected:</b> 10/07/2017 19:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.4
<b>Client ID:</b> VC-IRB-07-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 08:28	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.22 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.98	pg/g	1.98
73575-53-8	67-TeCB	U	1.98	pg/g	1.98
73575-52-7	68-TeCB	U	1.98	pg/g	1.98
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.98	pg/g	1.98
74338-23-1	73-TeCB	U	1.98	pg/g	1.98
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.98	pg/g	1.98
70362-49-1	78-TeCB	U	1.98	pg/g	1.98
41464-48-6	79-TeCB	U	1.98	pg/g	1.98
33284-52-5	80-TeCB	U	1.98	pg/g	1.98
70362-50-4	81-TeCB	U	1.98	pg/g	1.98
52663-62-4	82-PeCB	U	1.98	pg/g	1.98
60145-20-2	83-PeCB	U	1.98	pg/g	1.98
52663-60-2	84-PeCB	U	1.98	pg/g	1.98
65510-45-4	85-PeCB	CU	5.94	pg/g	5.94
55312-69-1	86-PeCB	CU	11.9	pg/g	11.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.96	pg/g	3.96
73575-57-2	89-PeCB	U	1.98	pg/g	1.98
68194-07-0	90-PeCB	CU	5.94	pg/g	5.94
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.98	pg/g	1.98
73575-56-1	93-PeCB	CU	3.96	pg/g	3.96
73575-55-0	94-PeCB	U	1.98	pg/g	1.98
38379-99-6	95-PeCB	U	1.98	pg/g	1.98
73575-54-9	96-PeCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535010  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-07-ALT-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 08:28  
**Data File:** c27oct17a\_2-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 19:10  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.22 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 17.4  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.96	pg/g	3.96
38380-01-7	99-PeCB	U	1.98	pg/g	1.98
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.98	pg/g	1.98
56558-16-8	104-PeCB	U	1.98	pg/g	1.98
32598-14-4	105-PeCB	U	1.98	pg/g	1.98
70424-69-0	106-PeCB	U	1.98	pg/g	1.98
70424-68-9	107-PeCB	U	1.98	pg/g	1.98
70362-41-3	108-PeCB	CU	3.96	pg/g	3.96
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.96	pg/g	3.96
39635-32-0	111-PeCB	U	1.98	pg/g	1.98
74472-36-9	112-PeCB	U	1.98	pg/g	1.98
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.98	pg/g	1.98
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.98	pg/g	1.98
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.98	pg/g	1.98
56558-18-0	121-PeCB	U	1.98	pg/g	1.98
76842-07-4	122-PeCB	U	1.98	pg/g	1.98
65510-44-3	123-PeCB	U	1.98	pg/g	1.98
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.98	pg/g	1.98
39635-33-1	127-PeCB	U	1.98	pg/g	1.98
38380-07-3	128-HxCB	CU	3.96	pg/g	3.96

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535010	<b>Date Collected:</b> 10/07/2017 19:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.4
<b>Client ID:</b> VC-IRB-07-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 08:28	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.22 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.94	pg/g	5.94
52663-66-8	130-HxCB	U	1.98	pg/g	1.98
61798-70-7	131-HxCB	U	1.98	pg/g	1.98
38380-05-1	132-HxCB	U	1.98	pg/g	1.98
35694-04-3	133-HxCB	U	1.98	pg/g	1.98
52704-70-8	134-HxCB	U	1.98	pg/g	1.98
52744-13-5	135-HxCB	CU	3.96	pg/g	3.96
38411-22-2	136-HxCB	U	1.98	pg/g	1.98
35694-06-5	137-HxCB	U	1.98	pg/g	1.98
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.96	pg/g	3.96
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.98	pg/g	1.98
41411-61-4	142-HxCB	U	1.98	pg/g	1.98
68194-15-0	143-HxCB	U	1.98	pg/g	1.98
68194-14-9	144-HxCB	U	1.98	pg/g	1.98
74472-40-5	145-HxCB	U	1.98	pg/g	1.98
51908-16-8	146-HxCB	U	1.98	pg/g	1.98
68194-13-8	147-HxCB	CU	3.96	pg/g	3.96
74472-41-6	148-HxCB	U	1.98	pg/g	1.98
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.98	pg/g	1.98
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.98	pg/g	1.98
35065-27-1	153-HxCB	CU	3.96	pg/g	3.96
60145-22-4	154-HxCB	U	1.98	pg/g	1.98
33979-03-2	155-HxCB	U	1.98	pg/g	1.98
38380-08-4	156-HxCB	CU	3.96	pg/g	3.96
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.98	pg/g	1.98
39635-35-3	159-HxCB	U	1.98	pg/g	1.98
41411-62-5	160-HxCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535010  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-07-ALT-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 08:28  
**Data File:** c27oct17a\_2-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 19:10  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.22 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 17.4  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.98	pg/g	1.98
39635-34-2	162-HxCB	U	1.98	pg/g	1.98
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.98	pg/g	1.98
74472-46-1	165-HxCB	U	1.98	pg/g	1.98
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.98	pg/g	1.98
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.98	pg/g	1.98
35065-30-6	170-HpCB	U	1.98	pg/g	1.98
52663-71-5	171-HpCB	CU	3.96	pg/g	3.96
52663-74-8	172-HpCB	U	1.98	pg/g	1.98
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.98	pg/g	1.98
40186-70-7	175-HpCB	U	1.98	pg/g	1.98
52663-65-7	176-HpCB	U	1.98	pg/g	1.98
52663-70-4	177-HpCB	U	1.98	pg/g	1.98
52663-67-9	178-HpCB	U	1.98	pg/g	1.98
52663-64-6	179-HpCB	U	1.98	pg/g	1.98
35065-29-3	180-HpCB	CU	3.96	pg/g	3.96
74472-47-2	181-HpCB	U	1.98	pg/g	1.98
60145-23-5	182-HpCB	U	1.98	pg/g	1.98
52663-69-1	183-HpCB	CU	3.96	pg/g	3.96
74472-48-3	184-HpCB	U	1.98	pg/g	1.98
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.98	pg/g	1.98
52663-68-0	187-HpCB	U	1.98	pg/g	1.98
74487-85-7	188-HpCB	U	1.98	pg/g	1.98
39635-31-9	189-HpCB	U	1.98	pg/g	1.98
41411-64-7	190-HpCB	U	1.98	pg/g	1.98
74472-50-7	191-HpCB	U	1.98	pg/g	1.98
74472-51-8	192-HpCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535010	<b>Date Collected:</b> 10/07/2017 19:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.4
<b>Client ID:</b> VC-IRB-07-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 08:28	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_2-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.22 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.98	pg/g	1.98
52663-78-2	195-OcCB	U	1.98	pg/g	1.98
42740-50-1	196-OcCB	U	1.98	pg/g	1.98
33091-17-7	197-OcCB	CU	3.96	pg/g	3.96
68194-17-2	198-OcCB	CU	3.96	pg/g	3.96
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.98	pg/g	1.98
2136-99-4	202-OcCB	U	1.98	pg/g	1.98
52663-76-0	203-OcCB	U	1.98	pg/g	1.98
74472-52-9	204-OcCB	U	1.98	pg/g	1.98
74472-53-0	205-OcCB	U	1.98	pg/g	1.98
40186-72-9	206-NoCB	U	1.98	pg/g	1.98
52663-79-3	207-NoCB	U	1.98	pg/g	1.98
52663-77-1	208-NoCB	U	1.98	pg/g	1.98
2051-24-3	209-DeCB	U	1.98	pg/g	1.98
1336-36-3	Total PCB Congeners	U	1.98	pg/g	1.98

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		83.9	198	pg/g	42.3	(15%-150%)
13C-3-MoCB		97.4	198	pg/g	49.2	(15%-150%)
13C-4-DiCB		100	198	pg/g	50.5	(25%-150%)
13C-15-DiCB		167	198	pg/g	84.5	(25%-150%)
13C-19-TrCB		144	198	pg/g	72.6	(25%-150%)
13C-37-TrCB		148	198	pg/g	74.8	(25%-150%)
13C-54-TeCB		130	198	pg/g	65.4	(25%-150%)
13C-77-TeCB		163	198	pg/g	82.1	(25%-150%)
13C-81-TeCB		163	198	pg/g	82.4	(25%-150%)
13C-104-PeCB		176	198	pg/g	88.6	(25%-150%)
13C-105-PeCB		143	198	pg/g	72.0	(25%-150%)
13C-114-PeCB		146	198	pg/g	73.4	(25%-150%)
13C-118-PeCB		149	198	pg/g	75.2	(25%-150%)
13C-123-PeCB		153	198	pg/g	77.2	(25%-150%)
13C-126-PeCB		142	198	pg/g	71.7	(25%-150%)
13C-155-HxCB		163	198	pg/g	82.2	(25%-150%)
13C-156-HxCB	C	267	396	pg/g	67.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		140	198	pg/g	70.7	(25%-150%)
13C-169-HxCB		129	198	pg/g	65.0	(25%-150%)
13C-188-HpCB		185	198	pg/g	93.3	(25%-150%)
13C-189-HpCB		133	198	pg/g	67.3	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535010	<b>Date Collected:</b> 10/07/2017 19:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.4
<b>Client ID:</b> VC-IRB-07-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 08:28	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.22 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			181	198	pg/g	91.1 (25%-150%)
13C-205-OcCB			163	198	pg/g	82.2 (25%-150%)
13C-206-NoCB			185	198	pg/g	93.5 (25%-150%)
13C-208-NoCB			182	198	pg/g	91.9 (25%-150%)
13C-209-DeCB			207	198	pg/g	104 (25%-150%)
13C-111-PeCB			164	198	pg/g	82.7 (30%-135%)
13C-28-TrCB			125	198	pg/g	62.9 (30%-135%)
13C-178-HpCB			198	198	pg/g	100 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 09:34	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		7.74	pg/g	2.68
2051-61-8	2-MoCB		19.3	pg/g	2.68
2051-62-9	3-MoCB		8.66	pg/g	2.68
13029-08-8	4-DiCB		13.9	pg/g	2.68
16605-91-7	5-DiCB	U	2.68	pg/g	2.68
25569-80-6	6-DiCB		8.72	pg/g	2.68
33284-50-3	7-DiCB	U	2.68	pg/g	2.68
34883-43-7	8-DiCB		33.1	pg/g	2.68
34883-39-1	9-DiCB	U	2.68	pg/g	2.68
33146-45-1	10-DiCB	U	2.68	pg/g	2.68
2050-67-1	11-DiCB		95.1	pg/g	26.8
2974-92-7	12-DiCB	C	17.7	pg/g	5.36
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2.68	pg/g	2.68
2050-68-2	15-DiCB		73.9	pg/g	2.68
38444-78-9	16-TrCB		8.62	pg/g	2.68
37680-66-3	17-TrCB		18.2	pg/g	2.68
37680-65-2	18-TrCB	C	23.2	pg/g	5.36
38444-73-4	19-TrCB		3.09	pg/g	2.68
38444-84-7	20-TrCB	C	108	pg/g	5.36
55702-46-0	21-TrCB	C	23.8	pg/g	5.36
38444-85-8	22-TrCB		20.2	pg/g	2.68
55720-44-0	23-TrCB	U	2.68	pg/g	2.68
55702-45-9	24-TrCB	U	2.68	pg/g	2.68
55712-37-3	25-TrCB		10.2	pg/g	2.68
38444-81-4	26-TrCB	C	15.7	pg/g	5.36
38444-76-7	27-TrCB		4.04	pg/g	2.68
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		58.9	pg/g	2.68
38444-77-8	32-TrCB		14.1	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 09:34	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2.68	pg/g	2.68
37680-69-6	35-TrCB		9.60	pg/g	2.68
38444-87-0	36-TrCB	U	2.68	pg/g	2.68
38444-90-5	37-TrCB		51.6	pg/g	2.68
53555-66-1	38-TrCB	U	2.68	pg/g	2.68
38444-88-1	39-TrCB	U	2.68	pg/g	2.68
38444-93-8	40-TeCB	C	20.5	pg/g	5.36
52663-59-9	41-TeCB	U	2.68	pg/g	2.68
36559-22-5	42-TeCB		16.3	pg/g	2.68
70362-46-8	43-TeCB	U	2.68	pg/g	2.68
41464-39-5	44-TeCB	C	57.2	pg/g	8.04
70362-45-7	45-TeCB	C	7.60	pg/g	5.36
41464-47-5	46-TeCB	U	2.68	pg/g	2.68
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB		7.15	pg/g	2.68
41464-40-8	49-TeCB	C	48.6	pg/g	5.36
62796-65-0	50-TeCB	CU	5.36	pg/g	5.36
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		46.7	pg/g	2.68
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2.68	pg/g	2.68
74338-24-2	55-TeCB	U	2.68	pg/g	2.68
41464-43-1	56-TeCB		36.3	pg/g	2.68
70424-67-8	57-TeCB	U	2.68	pg/g	2.68
41464-49-7	58-TeCB	U	2.68	pg/g	2.68
74472-33-6	59-TeCB	CU	8.04	pg/g	8.04
33025-41-1	60-TeCB		12.3	pg/g	2.68
33284-53-6	61-TeCB	C	125	pg/g	10.7
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB		3.35	pg/g	2.68
52663-58-8	64-TeCB		16.8	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 09:34	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		108	pg/g	2.68
73575-53-8	67-TeCB		3.64	pg/g	2.68
73575-52-7	68-TeCB	U	2.68	pg/g	2.68
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2.68	pg/g	2.68
74338-23-1	73-TeCB	U	2.68	pg/g	2.68
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB		25.0	pg/g	2.68
70362-49-1	78-TeCB	U	2.68	pg/g	2.68
41464-48-6	79-TeCB	U	2.68	pg/g	2.68
33284-52-5	80-TeCB	U	2.68	pg/g	2.68
70362-50-4	81-TeCB	U	2.68	pg/g	2.68
52663-62-4	82-PeCB		4.75	pg/g	2.68
60145-20-2	83-PeCB		4.25	pg/g	2.68
52663-60-2	84-PeCB		13.1	pg/g	2.68
65510-45-4	85-PeCB	C	11.9	pg/g	8.04
55312-69-1	86-PeCB	C	39.2	pg/g	16.1
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	C	17.4	pg/g	5.36
73575-57-2	89-PeCB	U	2.68	pg/g	2.68
68194-07-0	90-PeCB	C	79.7	pg/g	8.04
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB		15.0	pg/g	2.68
73575-56-1	93-PeCB	CU	5.36	pg/g	5.36
73575-55-0	94-PeCB	U	2.68	pg/g	2.68
38379-99-6	95-PeCB		39.4	pg/g	2.68
73575-54-9	96-PeCB	U	2.68	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 09:34	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	5.36	pg/g	5.36
38380-01-7	99-PeCB		85.1	pg/g	2.68
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2.68	pg/g	2.68
56558-16-8	104-PeCB	U	2.68	pg/g	2.68
32598-14-4	105-PeCB		31.9	pg/g	2.68
70424-69-0	106-PeCB	U	2.68	pg/g	2.68
70424-68-9	107-PeCB		10.6	pg/g	2.68
70362-41-3	108-PeCB	CU	5.36	pg/g	5.36
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	C	73.1	pg/g	5.36
39635-32-0	111-PeCB	U	2.68	pg/g	2.68
74472-36-9	112-PeCB	U	2.68	pg/g	2.68
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2.68	pg/g	2.68
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		112	pg/g	2.68
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2.68	pg/g	2.68
56558-18-0	121-PeCB	U	2.68	pg/g	2.68
76842-07-4	122-PeCB	U	2.68	pg/g	2.68
65510-44-3	123-PeCB	U	2.68	pg/g	2.68
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2.68	pg/g	2.68
39635-33-1	127-PeCB	U	2.68	pg/g	2.68
38380-07-3	128-HxCB	C	15.5	pg/g	5.36

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 09:34	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	C	121	pg/g	8.04
52663-66-8	130-HxCB		7.00	pg/g	2.68
61798-70-7	131-HxCB	U	2.68	pg/g	2.68
38380-05-1	132-HxCB		17.5	pg/g	2.68
35694-04-3	133-HxCB		4.05	pg/g	2.68
52704-70-8	134-HxCB		5.70	pg/g	2.68
52744-13-5	135-HxCB	C	37.7	pg/g	5.36
38411-22-2	136-HxCB		12.5	pg/g	2.68
35694-06-5	137-HxCB	U	2.68	pg/g	2.68
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	5.36	pg/g	5.36
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB		5.65	pg/g	2.68
41411-61-4	142-HxCB	U	2.68	pg/g	2.68
68194-15-0	143-HxCB	U	2.68	pg/g	2.68
68194-14-9	144-HxCB	U	2.68	pg/g	2.68
74472-40-5	145-HxCB	U	2.68	pg/g	2.68
51908-16-8	146-HxCB		32.1	pg/g	2.68
68194-13-8	147-HxCB	C	98.7	pg/g	5.36
74472-41-6	148-HxCB	U	2.68	pg/g	2.68
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB		2.90	pg/g	2.68
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2.68	pg/g	2.68
35065-27-1	153-HxCB	C	145	pg/g	5.36
60145-22-4	154-HxCB		12.8	pg/g	2.68
33979-03-2	155-HxCB	U	2.68	pg/g	2.68
38380-08-4	156-HxCB	C	11.0	pg/g	5.36
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB		5.93	pg/g	2.68
39635-35-3	159-HxCB	U	2.68	pg/g	2.68
41411-62-5	160-HxCB	U	2.68	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535011  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-08-ALT-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 09:34  
**Data File:** c27oct17a\_2-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/08/2017 18:10  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 50.3  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2.68	pg/g	2.68
39635-34-2	162-HxCB	U	2.68	pg/g	2.68
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB		4.35	pg/g	2.68
74472-46-1	165-HxCB	U	2.68	pg/g	2.68
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB		5.53	pg/g	2.68
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2.68	pg/g	2.68
35065-30-6	170-HpCB		22.8	pg/g	2.68
52663-71-5	171-HpCB	C	8.09	pg/g	5.36
52663-74-8	172-HpCB		4.31	pg/g	2.68
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB		14.6	pg/g	2.68
40186-70-7	175-HpCB	U	2.68	pg/g	2.68
52663-65-7	176-HpCB		3.70	pg/g	2.68
52663-70-4	177-HpCB		23.0	pg/g	2.68
52663-67-9	178-HpCB		13.6	pg/g	2.68
52663-64-6	179-HpCB		17.2	pg/g	2.68
35065-29-3	180-HpCB	C	50.4	pg/g	5.36
74472-47-2	181-HpCB	U	2.68	pg/g	2.68
60145-23-5	182-HpCB	U	2.68	pg/g	2.68
52663-69-1	183-HpCB	C	21.4	pg/g	5.36
74472-48-3	184-HpCB	U	2.68	pg/g	2.68
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2.68	pg/g	2.68
52663-68-0	187-HpCB		78.1	pg/g	2.68
74487-85-7	188-HpCB		4.85	pg/g	2.68
39635-31-9	189-HpCB	U	2.68	pg/g	2.68
41411-64-7	190-HpCB		3.23	pg/g	2.68
74472-50-7	191-HpCB	U	2.68	pg/g	2.68
74472-51-8	192-HpCB	U	2.68	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 09:34	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB		22.7	pg/g	2.68
52663-78-2	195-OcCB		5.51	pg/g	2.68
42740-50-1	196-OcCB		18.5	pg/g	2.68
33091-17-7	197-OcCB	C	6.93	pg/g	5.36
68194-17-2	198-OcCB	C	42.4	pg/g	5.36
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB		15.6	pg/g	2.68
2136-99-4	202-OcCB		24.7	pg/g	2.68
52663-76-0	203-OcCB		13.2	pg/g	2.68
74472-52-9	204-OcCB	U	2.68	pg/g	2.68
74472-53-0	205-OcCB	U	2.68	pg/g	2.68
40186-72-9	206-NoCB		59.5	pg/g	2.68
52663-79-3	207-NoCB		13.0	pg/g	2.68
52663-77-1	208-NoCB		45.6	pg/g	2.68
2051-24-3	209-DeCB		78.1	pg/g	2.68
1336-36-3	Total PCB Congeners		2870	pg/g	2.68

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		68.2	268	pg/g	25.5	(15%-150%)
13C-3-MoCB		79.0	268	pg/g	29.5	(15%-150%)
13C-4-DiCB		82.2	268	pg/g	30.7	(25%-150%)
13C-15-DiCB		144	268	pg/g	53.9	(25%-150%)
13C-19-TrCB		123	268	pg/g	45.8	(25%-150%)
13C-37-TrCB		129	268	pg/g	48.1	(25%-150%)
13C-54-TeCB		104	268	pg/g	38.7	(25%-150%)
13C-77-TeCB		160	268	pg/g	59.8	(25%-150%)
13C-81-TeCB		160	268	pg/g	59.9	(25%-150%)
13C-104-PeCB		137	268	pg/g	51.3	(25%-150%)
13C-105-PeCB		131	268	pg/g	48.9	(25%-150%)
13C-114-PeCB		134	268	pg/g	49.9	(25%-150%)
13C-118-PeCB		135	268	pg/g	50.5	(25%-150%)
13C-123-PeCB		138	268	pg/g	51.6	(25%-150%)
13C-126-PeCB		129	268	pg/g	48.0	(25%-150%)
13C-155-HxCB		133	268	pg/g	49.6	(25%-150%)
13C-156-HxCB	C	236	536	pg/g	44.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		124	268	pg/g	46.2	(25%-150%)
13C-169-HxCB		115	268	pg/g	43.0	(25%-150%)
13C-188-HpCB		164	268	pg/g	61.2	(25%-150%)
13C-189-HpCB		120	268	pg/g	44.9	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535011	<b>Date Collected:</b> 10/08/2017 18:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 50.3
<b>Client ID:</b> VC-IRB-08-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 09:34	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			161	268	pg/g	60.0 (25%-150%)
13C-205-OcCB			146	268	pg/g	54.3 (25%-150%)
13C-206-NoCB			160	268	pg/g	59.8 (25%-150%)
13C-208-NoCB			163	268	pg/g	60.7 (25%-150%)
13C-209-DeCB			193	268	pg/g	71.9 (25%-150%)
13C-111-PeCB			229	268	pg/g	85.3 (30%-135%)
13C-28-TrCB			168	268	pg/g	62.8 (30%-135%)
13C-178-HpCB			269	268	pg/g	100 (30%-135%)

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535012	<b>Date Collected:</b> 10/08/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84
<b>Client ID:</b> VC-IRB-08-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 10:41	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_2-7		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.27 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	8.17	pg/g	8.17
2051-61-8	2-MoCB	U	8.17	pg/g	8.17
2051-62-9	3-MoCB	U	8.17	pg/g	8.17
13029-08-8	4-DiCB	U	8.17	pg/g	8.17
16605-91-7	5-DiCB	U	8.17	pg/g	8.17
25569-80-6	6-DiCB	U	8.17	pg/g	8.17
33284-50-3	7-DiCB	U	8.17	pg/g	8.17
34883-43-7	8-DiCB		10.0	pg/g	8.17
34883-39-1	9-DiCB	U	8.17	pg/g	8.17
33146-45-1	10-DiCB	U	8.17	pg/g	8.17
2050-67-1	11-DiCB	U	81.7	pg/g	81.7
2974-92-7	12-DiCB	CU	16.3	pg/g	16.3
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	8.17	pg/g	8.17
2050-68-2	15-DiCB	U	8.17	pg/g	8.17
38444-78-9	16-TrCB	U	8.17	pg/g	8.17
37680-66-3	17-TrCB	U	8.17	pg/g	8.17
37680-65-2	18-TrCB	CU	16.3	pg/g	16.3
38444-73-4	19-TrCB	U	8.17	pg/g	8.17
38444-84-7	20-TrCB	CU	16.3	pg/g	16.3
55702-46-0	21-TrCB	CU	16.3	pg/g	16.3
38444-85-8	22-TrCB	U	8.17	pg/g	8.17
55720-44-0	23-TrCB	U	8.17	pg/g	8.17
55702-45-9	24-TrCB	U	8.17	pg/g	8.17
55712-37-3	25-TrCB	U	8.17	pg/g	8.17
38444-81-4	26-TrCB	CU	16.3	pg/g	16.3
38444-76-7	27-TrCB	U	8.17	pg/g	8.17
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	8.17	pg/g	8.17
38444-77-8	32-TrCB	U	8.17	pg/g	8.17

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535012	<b>Date Collected:</b> 10/08/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84
<b>Client ID:</b> VC-IRB-08-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 10:41	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_2-7		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.27 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	8.17	pg/g	8.17
37680-69-6	35-TrCB	U	8.17	pg/g	8.17
38444-87-0	36-TrCB	U	8.17	pg/g	8.17
38444-90-5	37-TrCB	U	8.17	pg/g	8.17
53555-66-1	38-TrCB	U	8.17	pg/g	8.17
38444-88-1	39-TrCB	U	8.17	pg/g	8.17
38444-93-8	40-TeCB	CU	16.3	pg/g	16.3
52663-59-9	41-TeCB	U	8.17	pg/g	8.17
36559-22-5	42-TeCB	U	8.17	pg/g	8.17
70362-46-8	43-TeCB	U	8.17	pg/g	8.17
41464-39-5	44-TeCB	CU	24.5	pg/g	24.5
70362-45-7	45-TeCB	CU	16.3	pg/g	16.3
41464-47-5	46-TeCB	U	8.17	pg/g	8.17
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	8.17	pg/g	8.17
41464-40-8	49-TeCB	CU	16.3	pg/g	16.3
62796-65-0	50-TeCB	CU	16.3	pg/g	16.3
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	8.17	pg/g	8.17
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	8.17	pg/g	8.17
74338-24-2	55-TeCB	U	8.17	pg/g	8.17
41464-43-1	56-TeCB	U	8.17	pg/g	8.17
70424-67-8	57-TeCB	U	8.17	pg/g	8.17
41464-49-7	58-TeCB	U	8.17	pg/g	8.17
74472-33-6	59-TeCB	CU	24.5	pg/g	24.5
33025-41-1	60-TeCB	U	8.17	pg/g	8.17
33284-53-6	61-TeCB	CU	32.7	pg/g	32.7
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	8.17	pg/g	8.17
52663-58-8	64-TeCB	U	8.17	pg/g	8.17

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535012	<b>Date Collected:</b> 10/08/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84
<b>Client ID:</b> VC-IRB-08-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 10:41	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.27 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	8.17	pg/g	8.17
73575-53-8	67-TeCB	U	8.17	pg/g	8.17
73575-52-7	68-TeCB	U	8.17	pg/g	8.17
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	8.17	pg/g	8.17
74338-23-1	73-TeCB	U	8.17	pg/g	8.17
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	8.17	pg/g	8.17
70362-49-1	78-TeCB	U	8.17	pg/g	8.17
41464-48-6	79-TeCB	U	8.17	pg/g	8.17
33284-52-5	80-TeCB	U	8.17	pg/g	8.17
70362-50-4	81-TeCB	U	8.17	pg/g	8.17
52663-62-4	82-PeCB	U	8.17	pg/g	8.17
60145-20-2	83-PeCB	U	8.17	pg/g	8.17
52663-60-2	84-PeCB	U	8.17	pg/g	8.17
65510-45-4	85-PeCB	CU	24.5	pg/g	24.5
55312-69-1	86-PeCB	CU	49	pg/g	49.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	16.3	pg/g	16.3
73575-57-2	89-PeCB	U	8.17	pg/g	8.17
68194-07-0	90-PeCB	CU	24.5	pg/g	24.5
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	8.17	pg/g	8.17
73575-56-1	93-PeCB	CU	16.3	pg/g	16.3
73575-55-0	94-PeCB	U	8.17	pg/g	8.17
38379-99-6	95-PeCB	U	8.17	pg/g	8.17
73575-54-9	96-PeCB	U	8.17	pg/g	8.17

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535012	<b>Date Collected:</b> 10/08/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84
<b>Client ID:</b> VC-IRB-08-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 10:41	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_2-7		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.27 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	16.3	pg/g	16.3
38380-01-7	99-PeCB	U	8.17	pg/g	8.17
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	8.17	pg/g	8.17
56558-16-8	104-PeCB	U	8.17	pg/g	8.17
32598-14-4	105-PeCB	U	8.17	pg/g	8.17
70424-69-0	106-PeCB	U	8.17	pg/g	8.17
70424-68-9	107-PeCB	U	8.17	pg/g	8.17
70362-41-3	108-PeCB	CU	16.3	pg/g	16.3
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	16.3	pg/g	16.3
39635-32-0	111-PeCB	U	8.17	pg/g	8.17
74472-36-9	112-PeCB	U	8.17	pg/g	8.17
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	8.17	pg/g	8.17
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	8.17	pg/g	8.17
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	8.17	pg/g	8.17
56558-18-0	121-PeCB	U	8.17	pg/g	8.17
76842-07-4	122-PeCB	U	8.17	pg/g	8.17
65510-44-3	123-PeCB	U	8.17	pg/g	8.17
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	8.17	pg/g	8.17
39635-33-1	127-PeCB	U	8.17	pg/g	8.17
38380-07-3	128-HxCB	CU	16.3	pg/g	16.3

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535012  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-08-ALT-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 10:41  
**Data File:** c27oct17a\_2-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/08/2017 18:20  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.27 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 84  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	24.5	pg/g	24.5
52663-66-8	130-HxCB	U	8.17	pg/g	8.17
61798-70-7	131-HxCB	U	8.17	pg/g	8.17
38380-05-1	132-HxCB	U	8.17	pg/g	8.17
35694-04-3	133-HxCB	U	8.17	pg/g	8.17
52704-70-8	134-HxCB	U	8.17	pg/g	8.17
52744-13-5	135-HxCB	CU	16.3	pg/g	16.3
38411-22-2	136-HxCB	U	8.17	pg/g	8.17
35694-06-5	137-HxCB	U	8.17	pg/g	8.17
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	16.3	pg/g	16.3
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	8.17	pg/g	8.17
41411-61-4	142-HxCB	U	8.17	pg/g	8.17
68194-15-0	143-HxCB	U	8.17	pg/g	8.17
68194-14-9	144-HxCB	U	8.17	pg/g	8.17
74472-40-5	145-HxCB	U	8.17	pg/g	8.17
51908-16-8	146-HxCB	U	8.17	pg/g	8.17
68194-13-8	147-HxCB	CU	16.3	pg/g	16.3
74472-41-6	148-HxCB	U	8.17	pg/g	8.17
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	8.17	pg/g	8.17
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	8.17	pg/g	8.17
35065-27-1	153-HxCB	CU	16.3	pg/g	16.3
60145-22-4	154-HxCB	U	8.17	pg/g	8.17
33979-03-2	155-HxCB	U	8.17	pg/g	8.17
38380-08-4	156-HxCB	CU	16.3	pg/g	16.3
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	8.17	pg/g	8.17
39635-35-3	159-HxCB	U	8.17	pg/g	8.17
41411-62-5	160-HxCB	U	8.17	pg/g	8.17

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535012  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-08-ALT-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 10:41  
**Data File:** c27oct17a\_2-7  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/08/2017 18:20  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.27 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 84  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	8.17	pg/g	8.17
39635-34-2	162-HxCB	U	8.17	pg/g	8.17
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	8.17	pg/g	8.17
74472-46-1	165-HxCB	U	8.17	pg/g	8.17
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	8.17	pg/g	8.17
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	8.17	pg/g	8.17
35065-30-6	170-HpCB	U	8.17	pg/g	8.17
52663-71-5	171-HpCB	CU	16.3	pg/g	16.3
52663-74-8	172-HpCB	U	8.17	pg/g	8.17
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	8.17	pg/g	8.17
40186-70-7	175-HpCB	U	8.17	pg/g	8.17
52663-65-7	176-HpCB	U	8.17	pg/g	8.17
52663-70-4	177-HpCB	U	8.17	pg/g	8.17
52663-67-9	178-HpCB	U	8.17	pg/g	8.17
52663-64-6	179-HpCB	U	8.17	pg/g	8.17
35065-29-3	180-HpCB	CU	16.3	pg/g	16.3
74472-47-2	181-HpCB	U	8.17	pg/g	8.17
60145-23-5	182-HpCB	U	8.17	pg/g	8.17
52663-69-1	183-HpCB	CU	16.3	pg/g	16.3
74472-48-3	184-HpCB	U	8.17	pg/g	8.17
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	8.17	pg/g	8.17
52663-68-0	187-HpCB	U	8.17	pg/g	8.17
74487-85-7	188-HpCB	U	8.17	pg/g	8.17
39635-31-9	189-HpCB	U	8.17	pg/g	8.17
41411-64-7	190-HpCB	U	8.17	pg/g	8.17
74472-50-7	191-HpCB	U	8.17	pg/g	8.17
74472-51-8	192-HpCB	U	8.17	pg/g	8.17

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535012	<b>Date Collected:</b> 10/08/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84
<b>Client ID:</b> VC-IRB-08-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 10:41	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.27 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	8.17	pg/g	8.17
52663-78-2	195-OcCB	U	8.17	pg/g	8.17
42740-50-1	196-OcCB	U	8.17	pg/g	8.17
33091-17-7	197-OcCB	CU	16.3	pg/g	16.3
68194-17-2	198-OcCB	CU	16.3	pg/g	16.3
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	8.17	pg/g	8.17
2136-99-4	202-OcCB	U	8.17	pg/g	8.17
52663-76-0	203-OcCB	U	8.17	pg/g	8.17
74472-52-9	204-OcCB	U	8.17	pg/g	8.17
74472-53-0	205-OcCB	U	8.17	pg/g	8.17
40186-72-9	206-NoCB	U	8.17	pg/g	8.17
52663-79-3	207-NoCB	U	8.17	pg/g	8.17
52663-77-1	208-NoCB	U	8.17	pg/g	8.17
2051-24-3	209-DeCB	U	8.17	pg/g	8.17
1336-36-3	Total PCB Congeners		10.0	pg/g	8.17

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		152	817	pg/g	18.6	(15%-150%)
13C-3-MoCB		170	817	pg/g	20.8	(15%-150%)
13C-4-DiCB		178	817	pg/g	21.8 *	(25%-150%)
13C-15-DiCB		294	817	pg/g	35.9	(25%-150%)
13C-19-TrCB		248	817	pg/g	30.4	(25%-150%)
13C-37-TrCB		267	817	pg/g	32.7	(25%-150%)
13C-54-TeCB		218	817	pg/g	26.6	(25%-150%)
13C-77-TeCB		328	817	pg/g	40.2	(25%-150%)
13C-81-TeCB		329	817	pg/g	40.3	(25%-150%)
13C-104-PeCB		324	817	pg/g	39.6	(25%-150%)
13C-105-PeCB		306	817	pg/g	37.5	(25%-150%)
13C-114-PeCB		312	817	pg/g	38.2	(25%-150%)
13C-118-PeCB		317	817	pg/g	38.7	(25%-150%)
13C-123-PeCB		324	817	pg/g	39.7	(25%-150%)
13C-126-PeCB		308	817	pg/g	37.6	(25%-150%)
13C-155-HxCB		313	817	pg/g	38.3	(25%-150%)
13C-156-HxCB	C	527	1630	pg/g	32.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		301	817	pg/g	36.8	(25%-150%)
13C-169-HxCB		271	817	pg/g	33.1	(25%-150%)
13C-188-HpCB		357	817	pg/g	43.7	(25%-150%)
13C-189-HpCB		290	817	pg/g	35.5	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535012	<b>Date Collected:</b> 10/08/2017 18:20	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 84
<b>Client ID:</b> VC-IRB-08-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 10:41	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.27 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			364	817	pg/g	44.5 (25%-150%)
13C-205-OcCB			359	817	pg/g	43.9 (25%-150%)
13C-206-NoCB			416	817	pg/g	50.9 (25%-150%)
13C-208-NoCB			391	817	pg/g	47.9 (25%-150%)
13C-209-DeCB			390	817	pg/g	47.7 (25%-150%)
13C-111-PeCB			626	817	pg/g	76.6 (30%-135%)
13C-28-TrCB			478	817	pg/g	58.5 (30%-135%)
13C-178-HpCB			665	817	pg/g	81.4 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535013	<b>Date Collected:</b> 10/08/2017 18:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.4
<b>Client ID:</b> VC-IRB-08-ALT-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 11:48	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_2-8		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.33 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.99	pg/g	1.99
2051-61-8	2-MoCB	U	1.99	pg/g	1.99
2051-62-9	3-MoCB	U	1.99	pg/g	1.99
13029-08-8	4-DiCB	U	1.99	pg/g	1.99
16605-91-7	5-DiCB	U	1.99	pg/g	1.99
25569-80-6	6-DiCB	U	1.99	pg/g	1.99
33284-50-3	7-DiCB	U	1.99	pg/g	1.99
34883-43-7	8-DiCB	U	1.99	pg/g	1.99
34883-39-1	9-DiCB	U	1.99	pg/g	1.99
33146-45-1	10-DiCB	U	1.99	pg/g	1.99
2050-67-1	11-DiCB	U	19.9	pg/g	19.9
2974-92-7	12-DiCB	CU	3.97	pg/g	3.97
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.99	pg/g	1.99
2050-68-2	15-DiCB	U	1.99	pg/g	1.99
38444-78-9	16-TrCB	U	1.99	pg/g	1.99
37680-66-3	17-TrCB	U	1.99	pg/g	1.99
37680-65-2	18-TrCB	CU	3.97	pg/g	3.97
38444-73-4	19-TrCB	U	1.99	pg/g	1.99
38444-84-7	20-TrCB	CU	3.97	pg/g	3.97
55702-46-0	21-TrCB	CU	3.97	pg/g	3.97
38444-85-8	22-TrCB	U	1.99	pg/g	1.99
55720-44-0	23-TrCB	U	1.99	pg/g	1.99
55702-45-9	24-TrCB	U	1.99	pg/g	1.99
55712-37-3	25-TrCB	U	1.99	pg/g	1.99
38444-81-4	26-TrCB	CU	3.97	pg/g	3.97
38444-76-7	27-TrCB	U	1.99	pg/g	1.99
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.99	pg/g	1.99
38444-77-8	32-TrCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535013	<b>Date Collected:</b> 10/08/2017 18:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.4
<b>Client ID:</b> VC-IRB-08-ALT-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 11:48	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.33 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.99	pg/g	1.99
37680-69-6	35-TrCB	U	1.99	pg/g	1.99
38444-87-0	36-TrCB	U	1.99	pg/g	1.99
38444-90-5	37-TrCB	U	1.99	pg/g	1.99
53555-66-1	38-TrCB	U	1.99	pg/g	1.99
38444-88-1	39-TrCB	U	1.99	pg/g	1.99
38444-93-8	40-TeCB	CU	3.97	pg/g	3.97
52663-59-9	41-TeCB	U	1.99	pg/g	1.99
36559-22-5	42-TeCB	U	1.99	pg/g	1.99
70362-46-8	43-TeCB	U	1.99	pg/g	1.99
41464-39-5	44-TeCB	CU	5.96	pg/g	5.96
70362-45-7	45-TeCB	CU	3.97	pg/g	3.97
41464-47-5	46-TeCB	U	1.99	pg/g	1.99
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.99	pg/g	1.99
41464-40-8	49-TeCB	CU	3.97	pg/g	3.97
62796-65-0	50-TeCB	CU	3.97	pg/g	3.97
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.99	pg/g	1.99
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.99	pg/g	1.99
74338-24-2	55-TeCB	U	1.99	pg/g	1.99
41464-43-1	56-TeCB	U	1.99	pg/g	1.99
70424-67-8	57-TeCB	U	1.99	pg/g	1.99
41464-49-7	58-TeCB	U	1.99	pg/g	1.99
74472-33-6	59-TeCB	CU	5.96	pg/g	5.96
33025-41-1	60-TeCB	U	1.99	pg/g	1.99
33284-53-6	61-TeCB	CU	7.95	pg/g	7.95
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.99	pg/g	1.99
52663-58-8	64-TeCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535013	<b>Date Collected:</b> 10/08/2017 18:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.4
<b>Client ID:</b> VC-IRB-08-ALT-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 11:48	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_2-8		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.33 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.99	pg/g	1.99
73575-53-8	67-TeCB	U	1.99	pg/g	1.99
73575-52-7	68-TeCB	U	1.99	pg/g	1.99
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.99	pg/g	1.99
74338-23-1	73-TeCB	U	1.99	pg/g	1.99
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.99	pg/g	1.99
70362-49-1	78-TeCB	U	1.99	pg/g	1.99
41464-48-6	79-TeCB	U	1.99	pg/g	1.99
33284-52-5	80-TeCB	U	1.99	pg/g	1.99
70362-50-4	81-TeCB	U	1.99	pg/g	1.99
52663-62-4	82-PeCB	U	1.99	pg/g	1.99
60145-20-2	83-PeCB	U	1.99	pg/g	1.99
52663-60-2	84-PeCB	U	1.99	pg/g	1.99
65510-45-4	85-PeCB	CU	5.96	pg/g	5.96
55312-69-1	86-PeCB	CU	11.9	pg/g	11.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.97	pg/g	3.97
73575-57-2	89-PeCB	U	1.99	pg/g	1.99
68194-07-0	90-PeCB	CU	5.96	pg/g	5.96
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.99	pg/g	1.99
73575-56-1	93-PeCB	CU	3.97	pg/g	3.97
73575-55-0	94-PeCB	U	1.99	pg/g	1.99
38379-99-6	95-PeCB	U	1.99	pg/g	1.99
73575-54-9	96-PeCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535013  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-08-ALT-S3  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 11:48  
**Data File:** c27oct17a\_2-8  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/08/2017 18:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.33 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 18.4  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.97	pg/g	3.97
38380-01-7	99-PeCB	U	1.99	pg/g	1.99
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.99	pg/g	1.99
56558-16-8	104-PeCB	U	1.99	pg/g	1.99
32598-14-4	105-PeCB	U	1.99	pg/g	1.99
70424-69-0	106-PeCB	U	1.99	pg/g	1.99
70424-68-9	107-PeCB	U	1.99	pg/g	1.99
70362-41-3	108-PeCB	CU	3.97	pg/g	3.97
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.97	pg/g	3.97
39635-32-0	111-PeCB	U	1.99	pg/g	1.99
74472-36-9	112-PeCB	U	1.99	pg/g	1.99
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.99	pg/g	1.99
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.99	pg/g	1.99
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.99	pg/g	1.99
56558-18-0	121-PeCB	U	1.99	pg/g	1.99
76842-07-4	122-PeCB	U	1.99	pg/g	1.99
65510-44-3	123-PeCB	U	1.99	pg/g	1.99
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.99	pg/g	1.99
39635-33-1	127-PeCB	U	1.99	pg/g	1.99
38380-07-3	128-HxCB	CU	3.97	pg/g	3.97

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535013	<b>Date Collected:</b> 10/08/2017 18:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.4
<b>Client ID:</b> VC-IRB-08-ALT-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 11:48	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_2-8		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.33 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.96	pg/g	5.96
52663-66-8	130-HxCB	U	1.99	pg/g	1.99
61798-70-7	131-HxCB	U	1.99	pg/g	1.99
38380-05-1	132-HxCB	U	1.99	pg/g	1.99
35694-04-3	133-HxCB	U	1.99	pg/g	1.99
52704-70-8	134-HxCB	U	1.99	pg/g	1.99
52744-13-5	135-HxCB	CU	3.97	pg/g	3.97
38411-22-2	136-HxCB	U	1.99	pg/g	1.99
35694-06-5	137-HxCB	U	1.99	pg/g	1.99
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.97	pg/g	3.97
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.99	pg/g	1.99
41411-61-4	142-HxCB	U	1.99	pg/g	1.99
68194-15-0	143-HxCB	U	1.99	pg/g	1.99
68194-14-9	144-HxCB	U	1.99	pg/g	1.99
74472-40-5	145-HxCB	U	1.99	pg/g	1.99
51908-16-8	146-HxCB	U	1.99	pg/g	1.99
68194-13-8	147-HxCB	CU	3.97	pg/g	3.97
74472-41-6	148-HxCB	U	1.99	pg/g	1.99
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.99	pg/g	1.99
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.99	pg/g	1.99
35065-27-1	153-HxCB	CU	3.97	pg/g	3.97
60145-22-4	154-HxCB	U	1.99	pg/g	1.99
33979-03-2	155-HxCB	U	1.99	pg/g	1.99
38380-08-4	156-HxCB	CU	3.97	pg/g	3.97
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.99	pg/g	1.99
39635-35-3	159-HxCB	U	1.99	pg/g	1.99
41411-62-5	160-HxCB	U	1.99	pg/g	1.99

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535013  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-08-ALT-S3  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 11:48  
**Data File:** c27oct17a\_2-8  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/08/2017 18:30  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.33 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 18.4  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.99	pg/g	1.99
39635-34-2	162-HxCB	U	1.99	pg/g	1.99
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.99	pg/g	1.99
74472-46-1	165-HxCB	U	1.99	pg/g	1.99
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.99	pg/g	1.99
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.99	pg/g	1.99
35065-30-6	170-HpCB	U	1.99	pg/g	1.99
52663-71-5	171-HpCB	CU	3.97	pg/g	3.97
52663-74-8	172-HpCB	U	1.99	pg/g	1.99
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB		3.42	pg/g	1.99
40186-70-7	175-HpCB	U	1.99	pg/g	1.99
52663-65-7	176-HpCB	U	1.99	pg/g	1.99
52663-70-4	177-HpCB	U	1.99	pg/g	1.99
52663-67-9	178-HpCB	U	1.99	pg/g	1.99
52663-64-6	179-HpCB		2.43	pg/g	1.99
35065-29-3	180-HpCB	C	13.0	pg/g	3.97
74472-47-2	181-HpCB	U	1.99	pg/g	1.99
60145-23-5	182-HpCB	U	1.99	pg/g	1.99
52663-69-1	183-HpCB	C	4.07	pg/g	3.97
74472-48-3	184-HpCB	U	1.99	pg/g	1.99
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.99	pg/g	1.99
52663-68-0	187-HpCB		15.7	pg/g	1.99
74487-85-7	188-HpCB	U	1.99	pg/g	1.99
39635-31-9	189-HpCB	U	1.99	pg/g	1.99
41411-64-7	190-HpCB	U	1.99	pg/g	1.99
74472-50-7	191-HpCB	U	1.99	pg/g	1.99
74472-51-8	192-HpCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535013	<b>Date Collected:</b> 10/08/2017 18:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.4
<b>Client ID:</b> VC-IRB-08-ALT-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 11:48	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.33 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB		17.8	pg/g	1.99
52663-78-2	195-OcCB		2.23	pg/g	1.99
42740-50-1	196-OcCB		8.86	pg/g	1.99
33091-17-7	197-OcCB	CU	3.97	pg/g	3.97
68194-17-2	198-OcCB	C	39.3	pg/g	3.97
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB		3.67	pg/g	1.99
2136-99-4	202-OcCB		9.53	pg/g	1.99
52663-76-0	203-OcCB		24.5	pg/g	1.99
74472-52-9	204-OcCB	U	1.99	pg/g	1.99
74472-53-0	205-OcCB	U	1.99	pg/g	1.99
40186-72-9	206-NoCB		39.7	pg/g	1.99
52663-79-3	207-NoCB		4.14	pg/g	1.99
52663-77-1	208-NoCB		11.4	pg/g	1.99
2051-24-3	209-DeCB		4.54	pg/g	1.99
1336-36-3	Total PCB Congeners		204	pg/g	1.99

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		75.5	199	pg/g	38.0	(15%-150%)
13C-3-MoCB		86.9	199	pg/g	43.7	(15%-150%)
13C-4-DiCB		91.1	199	pg/g	45.8	(25%-150%)
13C-15-DiCB		152	199	pg/g	76.5	(25%-150%)
13C-19-TrCB		128	199	pg/g	64.2	(25%-150%)
13C-37-TrCB		145	199	pg/g	72.8	(25%-150%)
13C-54-TeCB		120	199	pg/g	60.2	(25%-150%)
13C-77-TeCB		163	199	pg/g	82.2	(25%-150%)
13C-81-TeCB		163	199	pg/g	82.0	(25%-150%)
13C-104-PeCB		159	199	pg/g	80.1	(25%-150%)
13C-105-PeCB		137	199	pg/g	68.9	(25%-150%)
13C-114-PeCB		140	199	pg/g	70.6	(25%-150%)
13C-118-PeCB		142	199	pg/g	71.4	(25%-150%)
13C-123-PeCB		146	199	pg/g	73.6	(25%-150%)
13C-126-PeCB		136	199	pg/g	68.4	(25%-150%)
13C-155-HxCB		150	199	pg/g	75.6	(25%-150%)
13C-156-HxCB	C	258	397	pg/g	64.8	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		133	199	pg/g	67.1	(25%-150%)
13C-169-HxCB		131	199	pg/g	66.0	(25%-150%)
13C-188-HpCB		169	199	pg/g	84.9	(25%-150%)
13C-189-HpCB		128	199	pg/g	64.4	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535013	<b>Date Collected:</b> 10/08/2017 18:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.4
<b>Client ID:</b> VC-IRB-08-ALT-S3		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 11:48	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.33 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			164	199	pg/g	82.6 (25%-150%)
13C-205-OcCB			155	199	pg/g	78.2 (25%-150%)
13C-206-NoCB			176	199	pg/g	88.4 (25%-150%)
13C-208-NoCB			166	199	pg/g	83.6 (25%-150%)
13C-209-DeCB			171	199	pg/g	86.2 (25%-150%)
13C-111-PeCB			155	199	pg/g	78.1 (30%-135%)
13C-28-TrCB			119	199	pg/g	60.1 (30%-135%)
13C-178-HpCB			184	199	pg/g	92.4 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535014	<b>Date Collected:</b> 10/08/2017 16:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 51.7
<b>Client ID:</b> VC-IRB-09-ALT		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 12:54	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.46 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2.68	pg/g	2.68
2051-61-8	2-MoCB	U	2.68	pg/g	2.68
2051-62-9	3-MoCB	U	2.68	pg/g	2.68
13029-08-8	4-DiCB	U	2.68	pg/g	2.68
16605-91-7	5-DiCB	U	2.68	pg/g	2.68
25569-80-6	6-DiCB	U	2.68	pg/g	2.68
33284-50-3	7-DiCB	U	2.68	pg/g	2.68
34883-43-7	8-DiCB	U	2.68	pg/g	2.68
34883-39-1	9-DiCB	U	2.68	pg/g	2.68
33146-45-1	10-DiCB	U	2.68	pg/g	2.68
2050-67-1	11-DiCB	U	26.8	pg/g	26.8
2974-92-7	12-DiCB	CU	5.36	pg/g	5.36
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2.68	pg/g	2.68
2050-68-2	15-DiCB	U	2.68	pg/g	2.68
38444-78-9	16-TrCB	U	2.68	pg/g	2.68
37680-66-3	17-TrCB	U	2.68	pg/g	2.68
37680-65-2	18-TrCB	CU	5.36	pg/g	5.36
38444-73-4	19-TrCB	U	2.68	pg/g	2.68
38444-84-7	20-TrCB	CU	5.36	pg/g	5.36
55702-46-0	21-TrCB	CU	5.36	pg/g	5.36
38444-85-8	22-TrCB	U	2.68	pg/g	2.68
55720-44-0	23-TrCB	U	2.68	pg/g	2.68
55702-45-9	24-TrCB	U	2.68	pg/g	2.68
55712-37-3	25-TrCB	U	2.68	pg/g	2.68
38444-81-4	26-TrCB	CU	5.36	pg/g	5.36
38444-76-7	27-TrCB	U	2.68	pg/g	2.68
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2.68	pg/g	2.68
38444-77-8	32-TrCB	U	2.68	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535014  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-09-ALT  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 12:54  
**Data File:** c27oct17a\_2-9  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/08/2017 16:00  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.46 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 51.7  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2.68	pg/g	2.68
37680-69-6	35-TrCB	U	2.68	pg/g	2.68
38444-87-0	36-TrCB	U	2.68	pg/g	2.68
38444-90-5	37-TrCB	U	2.68	pg/g	2.68
53555-66-1	38-TrCB	U	2.68	pg/g	2.68
38444-88-1	39-TrCB	U	2.68	pg/g	2.68
38444-93-8	40-TeCB	CU	5.36	pg/g	5.36
52663-59-9	41-TeCB	U	2.68	pg/g	2.68
36559-22-5	42-TeCB	U	2.68	pg/g	2.68
70362-46-8	43-TeCB	U	2.68	pg/g	2.68
41464-39-5	44-TeCB	CU	8.04	pg/g	8.04
70362-45-7	45-TeCB	CU	5.36	pg/g	5.36
41464-47-5	46-TeCB	U	2.68	pg/g	2.68
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2.68	pg/g	2.68
41464-40-8	49-TeCB	CU	5.36	pg/g	5.36
62796-65-0	50-TeCB	CU	5.36	pg/g	5.36
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		3.22	pg/g	2.68
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2.68	pg/g	2.68
74338-24-2	55-TeCB	U	2.68	pg/g	2.68
41464-43-1	56-TeCB	U	2.68	pg/g	2.68
70424-67-8	57-TeCB	U	2.68	pg/g	2.68
41464-49-7	58-TeCB	U	2.68	pg/g	2.68
74472-33-6	59-TeCB	CU	8.04	pg/g	8.04
33025-41-1	60-TeCB	U	2.68	pg/g	2.68
33284-53-6	61-TeCB	CU	10.7	pg/g	10.7
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2.68	pg/g	2.68
52663-58-8	64-TeCB	U	2.68	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535014	<b>Date Collected:</b> 10/08/2017 16:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 51.7
<b>Client ID:</b> VC-IRB-09-ALT		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 12:54	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.46 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2.68	pg/g	2.68
73575-53-8	67-TeCB	U	2.68	pg/g	2.68
73575-52-7	68-TeCB	U	2.68	pg/g	2.68
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2.68	pg/g	2.68
74338-23-1	73-TeCB	U	2.68	pg/g	2.68
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2.68	pg/g	2.68
70362-49-1	78-TeCB	U	2.68	pg/g	2.68
41464-48-6	79-TeCB	U	2.68	pg/g	2.68
33284-52-5	80-TeCB	U	2.68	pg/g	2.68
70362-50-4	81-TeCB	U	2.68	pg/g	2.68
52663-62-4	82-PeCB	U	2.68	pg/g	2.68
60145-20-2	83-PeCB	U	2.68	pg/g	2.68
52663-60-2	84-PeCB	U	2.68	pg/g	2.68
65510-45-4	85-PeCB	CU	8.04	pg/g	8.04
55312-69-1	86-PeCB	CU	16.1	pg/g	16.1
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	5.36	pg/g	5.36
73575-57-2	89-PeCB	U	2.68	pg/g	2.68
68194-07-0	90-PeCB	CU	8.04	pg/g	8.04
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2.68	pg/g	2.68
73575-56-1	93-PeCB	CU	5.36	pg/g	5.36
73575-55-0	94-PeCB	U	2.68	pg/g	2.68
38379-99-6	95-PeCB	U	2.68	pg/g	2.68
73575-54-9	96-PeCB	U	2.68	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535014  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-09-ALT  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 12:54  
**Data File:** c27oct17a\_2-9  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/08/2017 16:00  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.46 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 51.7  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	5.36	pg/g	5.36
38380-01-7	99-PeCB	U	2.68	pg/g	2.68
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2.68	pg/g	2.68
56558-16-8	104-PeCB	U	2.68	pg/g	2.68
32598-14-4	105-PeCB	U	2.68	pg/g	2.68
70424-69-0	106-PeCB	U	2.68	pg/g	2.68
70424-68-9	107-PeCB	U	2.68	pg/g	2.68
70362-41-3	108-PeCB	CU	5.36	pg/g	5.36
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	5.36	pg/g	5.36
39635-32-0	111-PeCB	U	2.68	pg/g	2.68
74472-36-9	112-PeCB	U	2.68	pg/g	2.68
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2.68	pg/g	2.68
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		2.75	pg/g	2.68
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2.68	pg/g	2.68
56558-18-0	121-PeCB	U	2.68	pg/g	2.68
76842-07-4	122-PeCB	U	2.68	pg/g	2.68
65510-44-3	123-PeCB	U	2.68	pg/g	2.68
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2.68	pg/g	2.68
39635-33-1	127-PeCB	U	2.68	pg/g	2.68
38380-07-3	128-HxCB	CU	5.36	pg/g	5.36

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535014  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-09-ALT  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 12:54  
**Data File:** c27oct17a\_2-9  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/08/2017 16:00  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.46 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 51.7  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	8.04	pg/g	8.04
52663-66-8	130-HxCB	U	2.68	pg/g	2.68
61798-70-7	131-HxCB	U	2.68	pg/g	2.68
38380-05-1	132-HxCB	U	2.68	pg/g	2.68
35694-04-3	133-HxCB	U	2.68	pg/g	2.68
52704-70-8	134-HxCB	U	2.68	pg/g	2.68
52744-13-5	135-HxCB	CU	5.36	pg/g	5.36
38411-22-2	136-HxCB	U	2.68	pg/g	2.68
35694-06-5	137-HxCB	U	2.68	pg/g	2.68
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	5.36	pg/g	5.36
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2.68	pg/g	2.68
41411-61-4	142-HxCB	U	2.68	pg/g	2.68
68194-15-0	143-HxCB	U	2.68	pg/g	2.68
68194-14-9	144-HxCB	U	2.68	pg/g	2.68
74472-40-5	145-HxCB	U	2.68	pg/g	2.68
51908-16-8	146-HxCB	U	2.68	pg/g	2.68
68194-13-8	147-HxCB	CU	5.36	pg/g	5.36
74472-41-6	148-HxCB	U	2.68	pg/g	2.68
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2.68	pg/g	2.68
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2.68	pg/g	2.68
35065-27-1	153-HxCB	CU	5.36	pg/g	5.36
60145-22-4	154-HxCB	U	2.68	pg/g	2.68
33979-03-2	155-HxCB	U	2.68	pg/g	2.68
38380-08-4	156-HxCB	CU	5.36	pg/g	5.36
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2.68	pg/g	2.68
39635-35-3	159-HxCB	U	2.68	pg/g	2.68
41411-62-5	160-HxCB	U	2.68	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535014  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-09-ALT  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 12:54  
**Data File:** c27oct17a\_2-9  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/08/2017 16:00  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.46 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 51.7  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2.68	pg/g	2.68
39635-34-2	162-HxCB	U	2.68	pg/g	2.68
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2.68	pg/g	2.68
74472-46-1	165-HxCB	U	2.68	pg/g	2.68
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2.68	pg/g	2.68
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2.68	pg/g	2.68
35065-30-6	170-HpCB	U	2.68	pg/g	2.68
52663-71-5	171-HpCB	CU	5.36	pg/g	5.36
52663-74-8	172-HpCB	U	2.68	pg/g	2.68
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2.68	pg/g	2.68
40186-70-7	175-HpCB	U	2.68	pg/g	2.68
52663-65-7	176-HpCB	U	2.68	pg/g	2.68
52663-70-4	177-HpCB	U	2.68	pg/g	2.68
52663-67-9	178-HpCB	U	2.68	pg/g	2.68
52663-64-6	179-HpCB	U	2.68	pg/g	2.68
35065-29-3	180-HpCB	CU	5.36	pg/g	5.36
74472-47-2	181-HpCB	U	2.68	pg/g	2.68
60145-23-5	182-HpCB	U	2.68	pg/g	2.68
52663-69-1	183-HpCB	CU	5.36	pg/g	5.36
74472-48-3	184-HpCB	U	2.68	pg/g	2.68
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2.68	pg/g	2.68
52663-68-0	187-HpCB	U	2.68	pg/g	2.68
74487-85-7	188-HpCB	U	2.68	pg/g	2.68
39635-31-9	189-HpCB	U	2.68	pg/g	2.68
41411-64-7	190-HpCB	U	2.68	pg/g	2.68
74472-50-7	191-HpCB	U	2.68	pg/g	2.68
74472-51-8	192-HpCB	U	2.68	pg/g	2.68

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535014	<b>Date Collected:</b> 10/08/2017 16:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 51.7
<b>Client ID:</b> VC-IRB-09-ALT		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 12:54	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.46 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2.68	pg/g	2.68
52663-78-2	195-OcCB	U	2.68	pg/g	2.68
42740-50-1	196-OcCB	U	2.68	pg/g	2.68
33091-17-7	197-OcCB	CU	5.36	pg/g	5.36
68194-17-2	198-OcCB	CU	5.36	pg/g	5.36
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2.68	pg/g	2.68
2136-99-4	202-OcCB	U	2.68	pg/g	2.68
52663-76-0	203-OcCB	U	2.68	pg/g	2.68
74472-52-9	204-OcCB	U	2.68	pg/g	2.68
74472-53-0	205-OcCB	U	2.68	pg/g	2.68
40186-72-9	206-NoCB	U	2.68	pg/g	2.68
52663-79-3	207-NoCB	U	2.68	pg/g	2.68
52663-77-1	208-NoCB	U	2.68	pg/g	2.68
2051-24-3	209-DeCB	U	2.68	pg/g	2.68
1336-36-3	Total PCB Congeners		5.98	pg/g	2.68

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		37.7	268	pg/g	14.0 *	(15%-150%)
13C-3-MoCB		45.2	268	pg/g	16.9	(15%-150%)
13C-4-DiCB		46.6	268	pg/g	17.4 *	(25%-150%)
13C-15-DiCB		84.3	268	pg/g	31.4	(25%-150%)
13C-19-TrCB		75.7	268	pg/g	28.2	(25%-150%)
13C-37-TrCB		86.8	268	pg/g	32.4	(25%-150%)
13C-54-TeCB		76.5	268	pg/g	28.5	(25%-150%)
13C-77-TeCB		97.0	268	pg/g	36.2	(25%-150%)
13C-81-TeCB		97.3	268	pg/g	36.3	(25%-150%)
13C-104-PeCB		122	268	pg/g	45.6	(25%-150%)
13C-105-PeCB		99.5	268	pg/g	37.1	(25%-150%)
13C-114-PeCB		101	268	pg/g	37.9	(25%-150%)
13C-118-PeCB		105	268	pg/g	39.1	(25%-150%)
13C-123-PeCB		108	268	pg/g	40.2	(25%-150%)
13C-126-PeCB		94.2	268	pg/g	35.1	(25%-150%)
13C-155-HxCB		128	268	pg/g	47.7	(25%-150%)
13C-156-HxCB	C	200	536	pg/g	37.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		104	268	pg/g	38.8	(25%-150%)
13C-169-HxCB		90.0	268	pg/g	33.6	(25%-150%)
13C-188-HpCB		165	268	pg/g	61.6	(25%-150%)
13C-189-HpCB		110	268	pg/g	41.1	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535014	<b>Date Collected:</b> 10/08/2017 16:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 51.7
<b>Client ID:</b> VC-IRB-09-ALT		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 12:54	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.46 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			160	268	pg/g	59.8 (25%-150%)
13C-205-OcCB			136	268	pg/g	50.9 (25%-150%)
13C-206-NoCB			167	268	pg/g	62.2 (25%-150%)
13C-208-NoCB			167	268	pg/g	62.1 (25%-150%)
13C-209-DeCB			191	268	pg/g	71.3 (25%-150%)
13C-111-PeCB			219	268	pg/g	81.7 (30%-135%)
13C-28-TrCB			191	268	pg/g	71.2 (30%-135%)
13C-178-HpCB			276	268	pg/g	103 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535015  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-10  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 14:01  
**Data File:** c27oct17a\_2-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 17:05  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 42.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2.33	pg/g	2.33
2051-61-8	2-MoCB	U	2.33	pg/g	2.33
2051-62-9	3-MoCB	U	2.33	pg/g	2.33
13029-08-8	4-DiCB	U	2.33	pg/g	2.33
16605-91-7	5-DiCB	U	2.33	pg/g	2.33
25569-80-6	6-DiCB	U	2.33	pg/g	2.33
33284-50-3	7-DiCB	U	2.33	pg/g	2.33
34883-43-7	8-DiCB		4.13	pg/g	2.33
34883-39-1	9-DiCB	U	2.33	pg/g	2.33
33146-45-1	10-DiCB	U	2.33	pg/g	2.33
2050-67-1	11-DiCB	U	23.3	pg/g	23.3
2974-92-7	12-DiCB	CU	4.66	pg/g	4.66
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2.33	pg/g	2.33
2050-68-2	15-DiCB		9.52	pg/g	2.33
38444-78-9	16-TrCB	U	2.33	pg/g	2.33
37680-66-3	17-TrCB	U	2.33	pg/g	2.33
37680-65-2	18-TrCB	CU	4.66	pg/g	4.66
38444-73-4	19-TrCB	U	2.33	pg/g	2.33
38444-84-7	20-TrCB	C	14.7	pg/g	4.66
55702-46-0	21-TrCB	CU	4.66	pg/g	4.66
38444-85-8	22-TrCB		2.63	pg/g	2.33
55720-44-0	23-TrCB	U	2.33	pg/g	2.33
55702-45-9	24-TrCB	U	2.33	pg/g	2.33
55712-37-3	25-TrCB	U	2.33	pg/g	2.33
38444-81-4	26-TrCB	CU	4.66	pg/g	4.66
38444-76-7	27-TrCB	U	2.33	pg/g	2.33
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		8.14	pg/g	2.33
38444-77-8	32-TrCB	U	2.33	pg/g	2.33

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535015  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-10  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 14:01  
**Data File:** c27oct17a\_2-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 17:05  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 42.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2.33	pg/g	2.33
37680-69-6	35-TrCB	U	2.33	pg/g	2.33
38444-87-0	36-TrCB	U	2.33	pg/g	2.33
38444-90-5	37-TrCB		6.49	pg/g	2.33
53555-66-1	38-TrCB	U	2.33	pg/g	2.33
38444-88-1	39-TrCB	U	2.33	pg/g	2.33
38444-93-8	40-TeCB	CU	4.66	pg/g	4.66
52663-59-9	41-TeCB	U	2.33	pg/g	2.33
36559-22-5	42-TeCB	U	2.33	pg/g	2.33
70362-46-8	43-TeCB	U	2.33	pg/g	2.33
41464-39-5	44-TeCB	CU	6.99	pg/g	6.99
70362-45-7	45-TeCB	CU	4.66	pg/g	4.66
41464-47-5	46-TeCB	U	2.33	pg/g	2.33
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2.33	pg/g	2.33
41464-40-8	49-TeCB	CU	4.66	pg/g	4.66
62796-65-0	50-TeCB	CU	4.66	pg/g	4.66
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		6.69	pg/g	2.33
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2.33	pg/g	2.33
74338-24-2	55-TeCB	U	2.33	pg/g	2.33
41464-43-1	56-TeCB		4.41	pg/g	2.33
70424-67-8	57-TeCB	U	2.33	pg/g	2.33
41464-49-7	58-TeCB	U	2.33	pg/g	2.33
74472-33-6	59-TeCB	CU	6.99	pg/g	6.99
33025-41-1	60-TeCB	U	2.33	pg/g	2.33
33284-53-6	61-TeCB	C	15.3	pg/g	9.32
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2.33	pg/g	2.33
52663-58-8	64-TeCB		2.64	pg/g	2.33

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 3 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535015  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-10  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 14:01  
**Data File:** c27oct17a\_2-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 17:05  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 42.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		12.2	pg/g	2.33
73575-53-8	67-TeCB	U	2.33	pg/g	2.33
73575-52-7	68-TeCB	U	2.33	pg/g	2.33
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2.33	pg/g	2.33
74338-23-1	73-TeCB	U	2.33	pg/g	2.33
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB		2.35	pg/g	2.33
70362-49-1	78-TeCB	U	2.33	pg/g	2.33
41464-48-6	79-TeCB	U	2.33	pg/g	2.33
33284-52-5	80-TeCB	U	2.33	pg/g	2.33
70362-50-4	81-TeCB	U	2.33	pg/g	2.33
52663-62-4	82-PeCB	U	2.33	pg/g	2.33
60145-20-2	83-PeCB	U	2.33	pg/g	2.33
52663-60-2	84-PeCB	U	2.33	pg/g	2.33
65510-45-4	85-PeCB	CU	6.99	pg/g	6.99
55312-69-1	86-PeCB	CU	14	pg/g	14.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4.66	pg/g	4.66
73575-57-2	89-PeCB	U	2.33	pg/g	2.33
68194-07-0	90-PeCB	C	9.05	pg/g	6.99
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2.33	pg/g	2.33
73575-56-1	93-PeCB	CU	4.66	pg/g	4.66
73575-55-0	94-PeCB	U	2.33	pg/g	2.33
38379-99-6	95-PeCB		4.51	pg/g	2.33
73575-54-9	96-PeCB	U	2.33	pg/g	2.33

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535015  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-10  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 14:01  
**Data File:** c27oct17a\_2-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 17:05  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 42.8  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4.66	pg/g	4.66
38380-01-7	99-PeCB		7.78	pg/g	2.33
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2.33	pg/g	2.33
56558-16-8	104-PeCB	U	2.33	pg/g	2.33
32598-14-4	105-PeCB		3.79	pg/g	2.33
70424-69-0	106-PeCB	U	2.33	pg/g	2.33
70424-68-9	107-PeCB	U	2.33	pg/g	2.33
70362-41-3	108-PeCB	CU	4.66	pg/g	4.66
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	C	9.07	pg/g	4.66
39635-32-0	111-PeCB	U	2.33	pg/g	2.33
74472-36-9	112-PeCB	U	2.33	pg/g	2.33
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2.33	pg/g	2.33
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		12.0	pg/g	2.33
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2.33	pg/g	2.33
56558-18-0	121-PeCB	U	2.33	pg/g	2.33
76842-07-4	122-PeCB	U	2.33	pg/g	2.33
65510-44-3	123-PeCB	U	2.33	pg/g	2.33
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2.33	pg/g	2.33
39635-33-1	127-PeCB	U	2.33	pg/g	2.33
38380-07-3	128-HxCB	CU	4.66	pg/g	4.66

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 5 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535015  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-10  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 14:01  
**Data File:** c27oct17a\_2-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 17:05  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 42.8  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	C	15.7	pg/g	6.99
52663-66-8	130-HxCB	U	2.33	pg/g	2.33
61798-70-7	131-HxCB	U	2.33	pg/g	2.33
38380-05-1	132-HxCB		2.66	pg/g	2.33
35694-04-3	133-HxCB	U	2.33	pg/g	2.33
52704-70-8	134-HxCB	U	2.33	pg/g	2.33
52744-13-5	135-HxCB	C	5.26	pg/g	4.66
38411-22-2	136-HxCB	U	2.33	pg/g	2.33
35694-06-5	137-HxCB	U	2.33	pg/g	2.33
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4.66	pg/g	4.66
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2.33	pg/g	2.33
41411-61-4	142-HxCB	U	2.33	pg/g	2.33
68194-15-0	143-HxCB	U	2.33	pg/g	2.33
68194-14-9	144-HxCB	U	2.33	pg/g	2.33
74472-40-5	145-HxCB	U	2.33	pg/g	2.33
51908-16-8	146-HxCB		3.67	pg/g	2.33
68194-13-8	147-HxCB	C	10.9	pg/g	4.66
74472-41-6	148-HxCB	U	2.33	pg/g	2.33
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2.33	pg/g	2.33
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2.33	pg/g	2.33
35065-27-1	153-HxCB	C	16.1	pg/g	4.66
60145-22-4	154-HxCB	U	2.33	pg/g	2.33
33979-03-2	155-HxCB	U	2.33	pg/g	2.33
38380-08-4	156-HxCB	CU	4.66	pg/g	4.66
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2.33	pg/g	2.33
39635-35-3	159-HxCB	U	2.33	pg/g	2.33
41411-62-5	160-HxCB	U	2.33	pg/g	2.33

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535015  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-10  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 14:01  
**Data File:** c27oct17a\_2-10  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 17:05  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.02 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 42.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2.33	pg/g	2.33
39635-34-2	162-HxCB	U	2.33	pg/g	2.33
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2.33	pg/g	2.33
74472-46-1	165-HxCB	U	2.33	pg/g	2.33
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2.33	pg/g	2.33
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2.33	pg/g	2.33
35065-30-6	170-HpCB		2.90	pg/g	2.33
52663-71-5	171-HpCB	CU	4.66	pg/g	4.66
52663-74-8	172-HpCB	U	2.33	pg/g	2.33
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB		4.29	pg/g	2.33
40186-70-7	175-HpCB	U	2.33	pg/g	2.33
52663-65-7	176-HpCB	U	2.33	pg/g	2.33
52663-70-4	177-HpCB		3.50	pg/g	2.33
52663-67-9	178-HpCB	U	2.33	pg/g	2.33
52663-64-6	179-HpCB		3.22	pg/g	2.33
35065-29-3	180-HpCB	C	13.1	pg/g	4.66
74472-47-2	181-HpCB	U	2.33	pg/g	2.33
60145-23-5	182-HpCB	U	2.33	pg/g	2.33
52663-69-1	183-HpCB	CU	4.66	pg/g	4.66
74472-48-3	184-HpCB	U	2.33	pg/g	2.33
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2.33	pg/g	2.33
52663-68-0	187-HpCB		14.8	pg/g	2.33
74487-85-7	188-HpCB	U	2.33	pg/g	2.33
39635-31-9	189-HpCB	U	2.33	pg/g	2.33
41411-64-7	190-HpCB	U	2.33	pg/g	2.33
74472-50-7	191-HpCB	U	2.33	pg/g	2.33
74472-51-8	192-HpCB	U	2.33	pg/g	2.33

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535015	<b>Date Collected:</b> 10/07/2017 17:05	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 42.8
<b>Client ID:</b> VC-IRB-10		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 14:01	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB		12.7	pg/g	2.33
52663-78-2	195-OcCB	U	2.33	pg/g	2.33
42740-50-1	196-OcCB		7.26	pg/g	2.33
33091-17-7	197-OcCB	CU	4.66	pg/g	4.66
68194-17-2	198-OcCB	C	23.6	pg/g	4.66
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB		3.20	pg/g	2.33
2136-99-4	202-OcCB		6.22	pg/g	2.33
52663-76-0	203-OcCB		13.7	pg/g	2.33
74472-52-9	204-OcCB	U	2.33	pg/g	2.33
74472-53-0	205-OcCB	U	2.33	pg/g	2.33
40186-72-9	206-NoCB		28.8	pg/g	2.33
52663-79-3	207-NoCB		3.71	pg/g	2.33
52663-77-1	208-NoCB		10.2	pg/g	2.33
2051-24-3	209-DeCB		10.1	pg/g	2.33
1336-36-3	Total PCB Congeners		351	pg/g	2.33

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		56.1	233	pg/g	24.1	(15%-150%)
13C-3-MoCB		64.1	233	pg/g	27.5	(15%-150%)
13C-4-DiCB		64.4	233	pg/g	27.6	(25%-150%)
13C-15-DiCB		107	233	pg/g	46.0	(25%-150%)
13C-19-TrCB		93.7	233	pg/g	40.2	(25%-150%)
13C-37-TrCB		95.8	233	pg/g	41.1	(25%-150%)
13C-54-TeCB		89.2	233	pg/g	38.3	(25%-150%)
13C-77-TeCB		109	233	pg/g	46.9	(25%-150%)
13C-81-TeCB		108	233	pg/g	46.3	(25%-150%)
13C-104-PeCB		122	233	pg/g	52.5	(25%-150%)
13C-105-PeCB		100	233	pg/g	43.1	(25%-150%)
13C-114-PeCB		103	233	pg/g	44.1	(25%-150%)
13C-118-PeCB		103	233	pg/g	44.2	(25%-150%)
13C-123-PeCB		107	233	pg/g	46.1	(25%-150%)
13C-126-PeCB		94.7	233	pg/g	40.6	(25%-150%)
13C-155-HxCB		122	233	pg/g	52.4	(25%-150%)
13C-156-HxCB	C	194	466	pg/g	41.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		100	233	pg/g	43.1	(25%-150%)
13C-169-HxCB		85.9	233	pg/g	36.9	(25%-150%)
13C-188-HpCB		156	233	pg/g	67.0	(25%-150%)
13C-189-HpCB		101	233	pg/g	43.2	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535015	<b>Date Collected:</b> 10/07/2017 17:05	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 42.8
<b>Client ID:</b> VC-IRB-10		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 14:01	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.02 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			149	233	pg/g	63.8 (25%-150%)
13C-205-OcCB			124	233	pg/g	53.1 (25%-150%)
13C-206-NoCB			146	233	pg/g	62.8 (25%-150%)
13C-208-NoCB			150	233	pg/g	64.3 (25%-150%)
13C-209-DeCB			170	233	pg/g	72.8 (25%-150%)
13C-111-PeCB			166	233	pg/g	71.1 (30%-135%)
13C-28-TrCB			135	233	pg/g	58.0 (30%-135%)
13C-178-HpCB			207	233	pg/g	88.9 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535018  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-12-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 19:46  
**Data File:** c27oct17a\_3-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 12:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.61 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 20  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.98	pg/g	1.98
2051-61-8	2-MoCB	U	1.98	pg/g	1.98
2051-62-9	3-MoCB	U	1.98	pg/g	1.98
13029-08-8	4-DiCB	U	1.98	pg/g	1.98
16605-91-7	5-DiCB	U	1.98	pg/g	1.98
25569-80-6	6-DiCB	U	1.98	pg/g	1.98
33284-50-3	7-DiCB	U	1.98	pg/g	1.98
34883-43-7	8-DiCB	U	1.98	pg/g	1.98
34883-39-1	9-DiCB	U	1.98	pg/g	1.98
33146-45-1	10-DiCB	U	1.98	pg/g	1.98
2050-67-1	11-DiCB	U	19.8	pg/g	19.8
2974-92-7	12-DiCB	CU	3.96	pg/g	3.96
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.98	pg/g	1.98
2050-68-2	15-DiCB	U	1.98	pg/g	1.98
38444-78-9	16-TrCB	U	1.98	pg/g	1.98
37680-66-3	17-TrCB	U	1.98	pg/g	1.98
37680-65-2	18-TrCB	CU	3.96	pg/g	3.96
38444-73-4	19-TrCB	U	1.98	pg/g	1.98
38444-84-7	20-TrCB	CU	3.96	pg/g	3.96
55702-46-0	21-TrCB	CU	3.96	pg/g	3.96
38444-85-8	22-TrCB	U	1.98	pg/g	1.98
55720-44-0	23-TrCB	U	1.98	pg/g	1.98
55702-45-9	24-TrCB	U	1.98	pg/g	1.98
55712-37-3	25-TrCB	U	1.98	pg/g	1.98
38444-81-4	26-TrCB	CU	3.96	pg/g	3.96
38444-76-7	27-TrCB	U	1.98	pg/g	1.98
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		2.21	pg/g	1.98
38444-77-8	32-TrCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535018	<b>Date Collected:</b> 10/06/2017 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 20
<b>Client ID:</b> VC-IRB-12-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 19:46	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.61 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.98	pg/g	1.98
37680-69-6	35-TrCB	U	1.98	pg/g	1.98
38444-87-0	36-TrCB	U	1.98	pg/g	1.98
38444-90-5	37-TrCB	U	1.98	pg/g	1.98
53555-66-1	38-TrCB	U	1.98	pg/g	1.98
38444-88-1	39-TrCB	U	1.98	pg/g	1.98
38444-93-8	40-TeCB	CU	3.96	pg/g	3.96
52663-59-9	41-TeCB	U	1.98	pg/g	1.98
36559-22-5	42-TeCB	U	1.98	pg/g	1.98
70362-46-8	43-TeCB	U	1.98	pg/g	1.98
41464-39-5	44-TeCB	CU	5.94	pg/g	5.94
70362-45-7	45-TeCB	CU	3.96	pg/g	3.96
41464-47-5	46-TeCB	U	1.98	pg/g	1.98
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.98	pg/g	1.98
41464-40-8	49-TeCB	CU	3.96	pg/g	3.96
62796-65-0	50-TeCB	CU	3.96	pg/g	3.96
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.98	pg/g	1.98
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.98	pg/g	1.98
74338-24-2	55-TeCB	U	1.98	pg/g	1.98
41464-43-1	56-TeCB	U	1.98	pg/g	1.98
70424-67-8	57-TeCB	U	1.98	pg/g	1.98
41464-49-7	58-TeCB	U	1.98	pg/g	1.98
74472-33-6	59-TeCB	CU	5.94	pg/g	5.94
33025-41-1	60-TeCB	U	1.98	pg/g	1.98
33284-53-6	61-TeCB	CU	7.93	pg/g	7.93
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.98	pg/g	1.98
52663-58-8	64-TeCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535018  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-12-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 19:46  
**Data File:** c27oct17a\_3-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 12:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.61 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 20  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		2.75	pg/g	1.98
73575-53-8	67-TeCB	U	1.98	pg/g	1.98
73575-52-7	68-TeCB	U	1.98	pg/g	1.98
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.98	pg/g	1.98
74338-23-1	73-TeCB	U	1.98	pg/g	1.98
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.98	pg/g	1.98
70362-49-1	78-TeCB	U	1.98	pg/g	1.98
41464-48-6	79-TeCB	U	1.98	pg/g	1.98
33284-52-5	80-TeCB	U	1.98	pg/g	1.98
70362-50-4	81-TeCB	U	1.98	pg/g	1.98
52663-62-4	82-PeCB	U	1.98	pg/g	1.98
60145-20-2	83-PeCB	U	1.98	pg/g	1.98
52663-60-2	84-PeCB	U	1.98	pg/g	1.98
65510-45-4	85-PeCB	CU	5.94	pg/g	5.94
55312-69-1	86-PeCB	CU	11.9	pg/g	11.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.96	pg/g	3.96
73575-57-2	89-PeCB	U	1.98	pg/g	1.98
68194-07-0	90-PeCB	CU	5.94	pg/g	5.94
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.98	pg/g	1.98
73575-56-1	93-PeCB	CU	3.96	pg/g	3.96
73575-55-0	94-PeCB	U	1.98	pg/g	1.98
38379-99-6	95-PeCB	U	1.98	pg/g	1.98
73575-54-9	96-PeCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535018	<b>Date Collected:</b> 10/06/2017 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 20
<b>Client ID:</b> VC-IRB-12-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 19:46	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.61 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.96	pg/g	3.96
38380-01-7	99-PeCB	U	1.98	pg/g	1.98
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.98	pg/g	1.98
56558-16-8	104-PeCB	U	1.98	pg/g	1.98
32598-14-4	105-PeCB	U	1.98	pg/g	1.98
70424-69-0	106-PeCB	U	1.98	pg/g	1.98
70424-68-9	107-PeCB	U	1.98	pg/g	1.98
70362-41-3	108-PeCB	CU	3.96	pg/g	3.96
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.96	pg/g	3.96
39635-32-0	111-PeCB	U	1.98	pg/g	1.98
74472-36-9	112-PeCB	U	1.98	pg/g	1.98
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.98	pg/g	1.98
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		2.54	pg/g	1.98
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.98	pg/g	1.98
56558-18-0	121-PeCB	U	1.98	pg/g	1.98
76842-07-4	122-PeCB	U	1.98	pg/g	1.98
65510-44-3	123-PeCB	U	1.98	pg/g	1.98
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.98	pg/g	1.98
39635-33-1	127-PeCB	U	1.98	pg/g	1.98
38380-07-3	128-HxCB	CU	3.96	pg/g	3.96

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535018	<b>Date Collected:</b> 10/06/2017 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 20
<b>Client ID:</b> VC-IRB-12-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 19:46	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.61 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.94	pg/g	5.94
52663-66-8	130-HxCB	U	1.98	pg/g	1.98
61798-70-7	131-HxCB	U	1.98	pg/g	1.98
38380-05-1	132-HxCB	U	1.98	pg/g	1.98
35694-04-3	133-HxCB	U	1.98	pg/g	1.98
52704-70-8	134-HxCB	U	1.98	pg/g	1.98
52744-13-5	135-HxCB	CU	3.96	pg/g	3.96
38411-22-2	136-HxCB	U	1.98	pg/g	1.98
35694-06-5	137-HxCB	U	1.98	pg/g	1.98
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.96	pg/g	3.96
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.98	pg/g	1.98
41411-61-4	142-HxCB	U	1.98	pg/g	1.98
68194-15-0	143-HxCB	U	1.98	pg/g	1.98
68194-14-9	144-HxCB	U	1.98	pg/g	1.98
74472-40-5	145-HxCB	U	1.98	pg/g	1.98
51908-16-8	146-HxCB	U	1.98	pg/g	1.98
68194-13-8	147-HxCB	CU	3.96	pg/g	3.96
74472-41-6	148-HxCB	U	1.98	pg/g	1.98
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.98	pg/g	1.98
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.98	pg/g	1.98
35065-27-1	153-HxCB	CU	3.96	pg/g	3.96
60145-22-4	154-HxCB	U	1.98	pg/g	1.98
33979-03-2	155-HxCB	U	1.98	pg/g	1.98
38380-08-4	156-HxCB	CU	3.96	pg/g	3.96
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.98	pg/g	1.98
39635-35-3	159-HxCB	U	1.98	pg/g	1.98
41411-62-5	160-HxCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535018  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-12-S1  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 19:46  
**Data File:** c27oct17a\_3-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 12:30  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.61 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 20  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.98	pg/g	1.98
39635-34-2	162-HxCB	U	1.98	pg/g	1.98
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.98	pg/g	1.98
74472-46-1	165-HxCB	U	1.98	pg/g	1.98
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.98	pg/g	1.98
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.98	pg/g	1.98
35065-30-6	170-HpCB	U	1.98	pg/g	1.98
52663-71-5	171-HpCB	CU	3.96	pg/g	3.96
52663-74-8	172-HpCB	U	1.98	pg/g	1.98
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.98	pg/g	1.98
40186-70-7	175-HpCB	U	1.98	pg/g	1.98
52663-65-7	176-HpCB	U	1.98	pg/g	1.98
52663-70-4	177-HpCB	U	1.98	pg/g	1.98
52663-67-9	178-HpCB	U	1.98	pg/g	1.98
52663-64-6	179-HpCB	U	1.98	pg/g	1.98
35065-29-3	180-HpCB	CU	3.96	pg/g	3.96
74472-47-2	181-HpCB	U	1.98	pg/g	1.98
60145-23-5	182-HpCB	U	1.98	pg/g	1.98
52663-69-1	183-HpCB	CU	3.96	pg/g	3.96
74472-48-3	184-HpCB	U	1.98	pg/g	1.98
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.98	pg/g	1.98
52663-68-0	187-HpCB	U	1.98	pg/g	1.98
74487-85-7	188-HpCB	U	1.98	pg/g	1.98
39635-31-9	189-HpCB	U	1.98	pg/g	1.98
41411-64-7	190-HpCB	U	1.98	pg/g	1.98
74472-50-7	191-HpCB	U	1.98	pg/g	1.98
74472-51-8	192-HpCB	U	1.98	pg/g	1.98

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535018	<b>Date Collected:</b> 10/06/2017 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 20
<b>Client ID:</b> VC-IRB-12-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 19:46	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.61 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.98	pg/g	1.98
52663-78-2	195-OcCB	U	1.98	pg/g	1.98
42740-50-1	196-OcCB	U	1.98	pg/g	1.98
33091-17-7	197-OcCB	CU	3.96	pg/g	3.96
68194-17-2	198-OcCB	CU	3.96	pg/g	3.96
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.98	pg/g	1.98
2136-99-4	202-OcCB	U	1.98	pg/g	1.98
52663-76-0	203-OcCB	U	1.98	pg/g	1.98
74472-52-9	204-OcCB	U	1.98	pg/g	1.98
74472-53-0	205-OcCB	U	1.98	pg/g	1.98
40186-72-9	206-NoCB	U	1.98	pg/g	1.98
52663-79-3	207-NoCB	U	1.98	pg/g	1.98
52663-77-1	208-NoCB	U	1.98	pg/g	1.98
2051-24-3	209-DeCB	U	1.98	pg/g	1.98
1336-36-3	Total PCB Congeners		7.50	pg/g	1.98

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		68.6	198	pg/g	34.6	(15%-150%)
13C-3-MoCB		90.1	198	pg/g	45.5	(15%-150%)
13C-4-DiCB		91.1	198	pg/g	46.0	(25%-150%)
13C-15-DiCB		154	198	pg/g	77.8	(25%-150%)
13C-19-TrCB		135	198	pg/g	67.9	(25%-150%)
13C-37-TrCB		128	198	pg/g	64.6	(25%-150%)
13C-54-TeCB		127	198	pg/g	63.9	(25%-150%)
13C-77-TeCB		132	198	pg/g	66.6	(25%-150%)
13C-81-TeCB		134	198	pg/g	67.8	(25%-150%)
13C-104-PeCB		167	198	pg/g	84.5	(25%-150%)
13C-105-PeCB		121	198	pg/g	61.1	(25%-150%)
13C-114-PeCB		124	198	pg/g	62.6	(25%-150%)
13C-118-PeCB		125	198	pg/g	63.3	(25%-150%)
13C-123-PeCB		129	198	pg/g	64.9	(25%-150%)
13C-126-PeCB		111	198	pg/g	56.1	(25%-150%)
13C-155-HxCB		167	198	pg/g	84.5	(25%-150%)
13C-156-HxCB	C	232	396	pg/g	58.6	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		122	198	pg/g	61.6	(25%-150%)
13C-169-HxCB		102	198	pg/g	51.3	(25%-150%)
13C-188-HpCB		207	198	pg/g	104	(25%-150%)
13C-189-HpCB		122	198	pg/g	61.7	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535018	<b>Date Collected:</b> 10/06/2017 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 20
<b>Client ID:</b> VC-IRB-12-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 19:46	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.61 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			185	198	pg/g	93.3 (25%-150%)
13C-205-OcCB			151	198	pg/g	76.0 (25%-150%)
13C-206-NoCB			179	198	pg/g	90.3 (25%-150%)
13C-208-NoCB			177	198	pg/g	89.6 (25%-150%)
13C-209-DeCB			200	198	pg/g	101 (25%-150%)
13C-111-PeCB			155	198	pg/g	78.2 (30%-135%)
13C-28-TrCB			132	198	pg/g	66.4 (30%-135%)
13C-178-HpCB			199	198	pg/g	100 (30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535019  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-12-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 20:53  
**Data File:** c27oct17a\_3-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 12:40  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 37.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2.12	pg/g	2.12
2051-61-8	2-MoCB		2.99	pg/g	2.12
2051-62-9	3-MoCB	U	2.12	pg/g	2.12
13029-08-8	4-DiCB	U	2.12	pg/g	2.12
16605-91-7	5-DiCB	U	2.12	pg/g	2.12
25569-80-6	6-DiCB	U	2.12	pg/g	2.12
33284-50-3	7-DiCB	U	2.12	pg/g	2.12
34883-43-7	8-DiCB	U	2.12	pg/g	2.12
34883-39-1	9-DiCB	U	2.12	pg/g	2.12
33146-45-1	10-DiCB	U	2.12	pg/g	2.12
2050-67-1	11-DiCB	U	21.2	pg/g	21.2
2974-92-7	12-DiCB	CU	4.24	pg/g	4.24
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2.12	pg/g	2.12
2050-68-2	15-DiCB	U	2.12	pg/g	2.12
38444-78-9	16-TrCB	U	2.12	pg/g	2.12
37680-66-3	17-TrCB	U	2.12	pg/g	2.12
37680-65-2	18-TrCB	CU	4.24	pg/g	4.24
38444-73-4	19-TrCB	U	2.12	pg/g	2.12
38444-84-7	20-TrCB	CU	4.24	pg/g	4.24
55702-46-0	21-TrCB	CU	4.24	pg/g	4.24
38444-85-8	22-TrCB	U	2.12	pg/g	2.12
55720-44-0	23-TrCB	U	2.12	pg/g	2.12
55702-45-9	24-TrCB	U	2.12	pg/g	2.12
55712-37-3	25-TrCB	U	2.12	pg/g	2.12
38444-81-4	26-TrCB	CU	4.24	pg/g	4.24
38444-76-7	27-TrCB	U	2.12	pg/g	2.12
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2.12	pg/g	2.12
38444-77-8	32-TrCB	U	2.12	pg/g	2.12

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 2 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535019  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-12-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 20:53  
**Data File:** c27oct17a\_3-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 12:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 37.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2.12	pg/g	2.12
37680-69-6	35-TrCB	U	2.12	pg/g	2.12
38444-87-0	36-TrCB	U	2.12	pg/g	2.12
38444-90-5	37-TrCB	U	2.12	pg/g	2.12
53555-66-1	38-TrCB	U	2.12	pg/g	2.12
38444-88-1	39-TrCB	U	2.12	pg/g	2.12
38444-93-8	40-TeCB	CU	4.24	pg/g	4.24
52663-59-9	41-TeCB	U	2.12	pg/g	2.12
36559-22-5	42-TeCB	U	2.12	pg/g	2.12
70362-46-8	43-TeCB	U	2.12	pg/g	2.12
41464-39-5	44-TeCB	CU	6.36	pg/g	6.36
70362-45-7	45-TeCB	CU	4.24	pg/g	4.24
41464-47-5	46-TeCB	U	2.12	pg/g	2.12
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2.12	pg/g	2.12
41464-40-8	49-TeCB	CU	4.24	pg/g	4.24
62796-65-0	50-TeCB	CU	4.24	pg/g	4.24
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2.12	pg/g	2.12
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2.12	pg/g	2.12
74338-24-2	55-TeCB	U	2.12	pg/g	2.12
41464-43-1	56-TeCB	U	2.12	pg/g	2.12
70424-67-8	57-TeCB	U	2.12	pg/g	2.12
41464-49-7	58-TeCB	U	2.12	pg/g	2.12
74472-33-6	59-TeCB	CU	6.36	pg/g	6.36
33025-41-1	60-TeCB	U	2.12	pg/g	2.12
33284-53-6	61-TeCB	CU	8.48	pg/g	8.48
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2.12	pg/g	2.12
52663-58-8	64-TeCB	U	2.12	pg/g	2.12

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 3 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535019  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-12-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 20:53  
**Data File:** c27oct17a\_3-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 12:40  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 37.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2.12	pg/g	2.12
73575-53-8	67-TeCB	U	2.12	pg/g	2.12
73575-52-7	68-TeCB	U	2.12	pg/g	2.12
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2.12	pg/g	2.12
74338-23-1	73-TeCB	U	2.12	pg/g	2.12
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2.12	pg/g	2.12
70362-49-1	78-TeCB	U	2.12	pg/g	2.12
41464-48-6	79-TeCB	U	2.12	pg/g	2.12
33284-52-5	80-TeCB	U	2.12	pg/g	2.12
70362-50-4	81-TeCB	U	2.12	pg/g	2.12
52663-62-4	82-PeCB	U	2.12	pg/g	2.12
60145-20-2	83-PeCB	U	2.12	pg/g	2.12
52663-60-2	84-PeCB	U	2.12	pg/g	2.12
65510-45-4	85-PeCB	CU	6.36	pg/g	6.36
55312-69-1	86-PeCB	CU	12.7	pg/g	12.7
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4.24	pg/g	4.24
73575-57-2	89-PeCB	U	2.12	pg/g	2.12
68194-07-0	90-PeCB	CU	6.36	pg/g	6.36
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2.12	pg/g	2.12
73575-56-1	93-PeCB	CU	4.24	pg/g	4.24
73575-55-0	94-PeCB	U	2.12	pg/g	2.12
38379-99-6	95-PeCB	U	2.12	pg/g	2.12
73575-54-9	96-PeCB	U	2.12	pg/g	2.12

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 4 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535019  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-12-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 20:53  
**Data File:** c27oct17a\_3-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 12:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 37.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4.24	pg/g	4.24
38380-01-7	99-PeCB	U	2.12	pg/g	2.12
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2.12	pg/g	2.12
56558-16-8	104-PeCB	U	2.12	pg/g	2.12
32598-14-4	105-PeCB	U	2.12	pg/g	2.12
70424-69-0	106-PeCB	U	2.12	pg/g	2.12
70424-68-9	107-PeCB	U	2.12	pg/g	2.12
70362-41-3	108-PeCB	CU	4.24	pg/g	4.24
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4.24	pg/g	4.24
39635-32-0	111-PeCB	U	2.12	pg/g	2.12
74472-36-9	112-PeCB	U	2.12	pg/g	2.12
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2.12	pg/g	2.12
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2.12	pg/g	2.12
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2.12	pg/g	2.12
56558-18-0	121-PeCB	U	2.12	pg/g	2.12
76842-07-4	122-PeCB	U	2.12	pg/g	2.12
65510-44-3	123-PeCB	U	2.12	pg/g	2.12
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2.12	pg/g	2.12
39635-33-1	127-PeCB	U	2.12	pg/g	2.12
38380-07-3	128-HxCB	CU	4.24	pg/g	4.24

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535019  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-12-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 20:53  
**Data File:** c27oct17a\_3-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 12:40  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 37.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6.36	pg/g	6.36
52663-66-8	130-HxCB	U	2.12	pg/g	2.12
61798-70-7	131-HxCB	U	2.12	pg/g	2.12
38380-05-1	132-HxCB	U	2.12	pg/g	2.12
35694-04-3	133-HxCB	U	2.12	pg/g	2.12
52704-70-8	134-HxCB	U	2.12	pg/g	2.12
52744-13-5	135-HxCB	CU	4.24	pg/g	4.24
38411-22-2	136-HxCB	U	2.12	pg/g	2.12
35694-06-5	137-HxCB	U	2.12	pg/g	2.12
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4.24	pg/g	4.24
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2.12	pg/g	2.12
41411-61-4	142-HxCB	U	2.12	pg/g	2.12
68194-15-0	143-HxCB	U	2.12	pg/g	2.12
68194-14-9	144-HxCB	U	2.12	pg/g	2.12
74472-40-5	145-HxCB	U	2.12	pg/g	2.12
51908-16-8	146-HxCB	U	2.12	pg/g	2.12
68194-13-8	147-HxCB	CU	4.24	pg/g	4.24
74472-41-6	148-HxCB	U	2.12	pg/g	2.12
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2.12	pg/g	2.12
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2.12	pg/g	2.12
35065-27-1	153-HxCB	CU	4.24	pg/g	4.24
60145-22-4	154-HxCB	U	2.12	pg/g	2.12
33979-03-2	155-HxCB	U	2.12	pg/g	2.12
38380-08-4	156-HxCB	CU	4.24	pg/g	4.24
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2.12	pg/g	2.12
39635-35-3	159-HxCB	U	2.12	pg/g	2.12
41411-62-5	160-HxCB	U	2.12	pg/g	2.12

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535019  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-12-S2  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 20:53  
**Data File:** c27oct17a\_3-5  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 12:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.01 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 37.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2.12	pg/g	2.12
39635-34-2	162-HxCB	U	2.12	pg/g	2.12
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2.12	pg/g	2.12
74472-46-1	165-HxCB	U	2.12	pg/g	2.12
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2.12	pg/g	2.12
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2.12	pg/g	2.12
35065-30-6	170-HpCB	U	2.12	pg/g	2.12
52663-71-5	171-HpCB	CU	4.24	pg/g	4.24
52663-74-8	172-HpCB	U	2.12	pg/g	2.12
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2.12	pg/g	2.12
40186-70-7	175-HpCB	U	2.12	pg/g	2.12
52663-65-7	176-HpCB	U	2.12	pg/g	2.12
52663-70-4	177-HpCB	U	2.12	pg/g	2.12
52663-67-9	178-HpCB	U	2.12	pg/g	2.12
52663-64-6	179-HpCB	U	2.12	pg/g	2.12
35065-29-3	180-HpCB	CU	4.24	pg/g	4.24
74472-47-2	181-HpCB	U	2.12	pg/g	2.12
60145-23-5	182-HpCB	U	2.12	pg/g	2.12
52663-69-1	183-HpCB	CU	4.24	pg/g	4.24
74472-48-3	184-HpCB	U	2.12	pg/g	2.12
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2.12	pg/g	2.12
52663-68-0	187-HpCB	U	2.12	pg/g	2.12
74487-85-7	188-HpCB	U	2.12	pg/g	2.12
39635-31-9	189-HpCB	U	2.12	pg/g	2.12
41411-64-7	190-HpCB	U	2.12	pg/g	2.12
74472-50-7	191-HpCB	U	2.12	pg/g	2.12
74472-51-8	192-HpCB	U	2.12	pg/g	2.12

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535019	<b>Date Collected:</b> 10/06/2017 12:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 37.1
<b>Client ID:</b> VC-IRB-12-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 20:53	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.01 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2.12	pg/g	2.12
52663-78-2	195-OcCB	U	2.12	pg/g	2.12
42740-50-1	196-OcCB	U	2.12	pg/g	2.12
33091-17-7	197-OcCB	CU	4.24	pg/g	4.24
68194-17-2	198-OcCB	CU	4.24	pg/g	4.24
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2.12	pg/g	2.12
2136-99-4	202-OcCB	U	2.12	pg/g	2.12
52663-76-0	203-OcCB	U	2.12	pg/g	2.12
74472-52-9	204-OcCB	U	2.12	pg/g	2.12
74472-53-0	205-OcCB	U	2.12	pg/g	2.12
40186-72-9	206-NoCB	U	2.12	pg/g	2.12
52663-79-3	207-NoCB	U	2.12	pg/g	2.12
52663-77-1	208-NoCB	U	2.12	pg/g	2.12
2051-24-3	209-DeCB	U	2.12	pg/g	2.12
1336-36-3	Total PCB Congeners		2.99	pg/g	2.12

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		73.8	212	pg/g	34.8	(15%-150%)
13C-3-MoCB		81.9	212	pg/g	38.7	(15%-150%)
13C-4-DiCB		82.8	212	pg/g	39.1	(25%-150%)
13C-15-DiCB		131	212	pg/g	61.8	(25%-150%)
13C-19-TrCB		112	212	pg/g	53.0	(25%-150%)
13C-37-TrCB		110	212	pg/g	51.8	(25%-150%)
13C-54-TeCB		97.5	212	pg/g	46.0	(25%-150%)
13C-77-TeCB		125	212	pg/g	58.8	(25%-150%)
13C-81-TeCB		125	212	pg/g	59.0	(25%-150%)
13C-104-PeCB		128	212	pg/g	60.3	(25%-150%)
13C-105-PeCB		106	212	pg/g	50.1	(25%-150%)
13C-114-PeCB		109	212	pg/g	51.5	(25%-150%)
13C-118-PeCB		112	212	pg/g	53.0	(25%-150%)
13C-123-PeCB		114	212	pg/g	53.6	(25%-150%)
13C-126-PeCB		102	212	pg/g	48.0	(25%-150%)
13C-155-HxCB		119	212	pg/g	56.3	(25%-150%)
13C-156-HxCB	C	195	424	pg/g	45.9	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		103	212	pg/g	48.5	(25%-150%)
13C-169-HxCB		90.4	212	pg/g	42.7	(25%-150%)
13C-188-HpCB		146	212	pg/g	69.1	(25%-150%)
13C-189-HpCB		100	212	pg/g	47.3	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535019	<b>Date Collected:</b> 10/06/2017 12:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 37.1
<b>Client ID:</b> VC-IRB-12-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 20:53	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.01 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			141	212	pg/g	66.6 (25%-150%)
13C-205-OcCB			124	212	pg/g	58.5 (25%-150%)
13C-206-NoCB			143	212	pg/g	67.6 (25%-150%)
13C-208-NoCB			140	212	pg/g	66.2 (25%-150%)
13C-209-DeCB			164	212	pg/g	77.6 (25%-150%)
13C-111-PeCB			180	212	pg/g	84.9 (30%-135%)
13C-28-TrCB			141	212	pg/g	66.5 (30%-135%)
13C-178-HpCB			218	212	pg/g	103 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

SDG Number: L1736278  
Lab Sample ID: 11535020  
Client Sample: 1613B/1668A Soil  
Client ID: VC-IRB-25  
Batch ID: 36009  
Run Date: 10/28/2017 22:00  
Data File: c27oct17a\_3-6  
Prep Batch: 36007  
Prep Date: 25-OCT-17

Client: ALPH001  
Date Collected: 10/06/2017 14:45  
Date Received: 10/18/2017 10:20  
Method: EPA Method 1668A  
Analyst: MLS  
Prep Method: SW846 3540C  
Prep Aliquot: 15.05 g

Project: ALPH00217  
Matrix: SOIL  
%Moisture: 61.8  
Prep Basis: Dry Weight  
Instrument: HRP791  
Dilution: 1  
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		6.95	pg/g	3.48
2051-61-8	2-MoCB		20.3	pg/g	3.48
2051-62-9	3-MoCB		8.71	pg/g	3.48
13029-08-8	4-DiCB		10.1	pg/g	3.48
16605-91-7	5-DiCB	U	3.48	pg/g	3.48
25569-80-6	6-DiCB		6.36	pg/g	3.48
33284-50-3	7-DiCB	U	3.48	pg/g	3.48
34883-43-7	8-DiCB		24.2	pg/g	3.48
34883-39-1	9-DiCB	U	3.48	pg/g	3.48
33146-45-1	10-DiCB	U	3.48	pg/g	3.48
2050-67-1	11-DiCB		102	pg/g	34.8
2974-92-7	12-DiCB	C	14.8	pg/g	6.96
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	3.48	pg/g	3.48
2050-68-2	15-DiCB		68.5	pg/g	3.48
38444-78-9	16-TrCB	U	3.48	pg/g	3.48
37680-66-3	17-TrCB		12.9	pg/g	3.48
37680-65-2	18-TrCB	C	17.3	pg/g	6.96
38444-73-4	19-TrCB	U	3.48	pg/g	3.48
38444-84-7	20-TrCB	C	98.8	pg/g	6.96
55702-46-0	21-TrCB	C	21.1	pg/g	6.96
38444-85-8	22-TrCB		17.7	pg/g	3.48
55720-44-0	23-TrCB	U	3.48	pg/g	3.48
55702-45-9	24-TrCB	U	3.48	pg/g	3.48
55712-37-3	25-TrCB		10.5	pg/g	3.48
38444-81-4	26-TrCB	C	15.5	pg/g	6.96
38444-76-7	27-TrCB	U	3.48	pg/g	3.48
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		56.6	pg/g	3.48
38444-77-8	32-TrCB		8.83	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 2 of 8

SDG Number: L1736278  
Lab Sample ID: 11535020  
Client Sample: 1613B/1668A Soil  
Client ID: VC-IRB-25  
Batch ID: 36009  
Run Date: 10/28/2017 22:00  
Data File: c27oct17a\_3-6  
Prep Batch: 36007  
Prep Date: 25-OCT-17

Client: ALPH001  
Date Collected: 10/06/2017 14:45  
Date Received: 10/18/2017 10:20  
Method: EPA Method 1668A  
Analyst: MLS  
Prep Method: SW846 3540C  
Prep Aliquot: 15.05 g

Project: ALPH00217  
Matrix: SOIL  
%Moisture: 61.8  
Prep Basis: Dry Weight  
Instrument: HRP791  
Dilution: 1  
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	3.48	pg/g	3.48
37680-69-6	35-TrCB		10.3	pg/g	3.48
38444-87-0	36-TrCB	U	3.48	pg/g	3.48
38444-90-5	37-TrCB		48.5	pg/g	3.48
53555-66-1	38-TrCB	U	3.48	pg/g	3.48
38444-88-1	39-TrCB	U	3.48	pg/g	3.48
38444-93-8	40-TeCB	C	17.2	pg/g	6.96
52663-59-9	41-TeCB	U	3.48	pg/g	3.48
36559-22-5	42-TeCB		14.2	pg/g	3.48
70362-46-8	43-TeCB	U	3.48	pg/g	3.48
41464-39-5	44-TeCB	C	47.4	pg/g	10.4
70362-45-7	45-TeCB	CU	6.96	pg/g	6.96
41464-47-5	46-TeCB	U	3.48	pg/g	3.48
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB		6.15	pg/g	3.48
41464-40-8	49-TeCB	C	40.9	pg/g	6.96
62796-65-0	50-TeCB	CU	6.96	pg/g	6.96
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		41.5	pg/g	3.48
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	3.48	pg/g	3.48
74338-24-2	55-TeCB	U	3.48	pg/g	3.48
41464-43-1	56-TeCB		29.9	pg/g	3.48
70424-67-8	57-TeCB	U	3.48	pg/g	3.48
41464-49-7	58-TeCB	U	3.48	pg/g	3.48
74472-33-6	59-TeCB	CU	10.4	pg/g	10.4
33025-41-1	60-TeCB		9.79	pg/g	3.48
33284-53-6	61-TeCB	C	111	pg/g	13.9
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	3.48	pg/g	3.48
52663-58-8	64-TeCB		14.7	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 3 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535020  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-25  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 22:00  
**Data File:** c27oct17a\_3-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 14:45  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 61.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		89.0	pg/g	3.48
73575-53-8	67-TeCB	U	3.48	pg/g	3.48
73575-52-7	68-TeCB	U	3.48	pg/g	3.48
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	3.48	pg/g	3.48
74338-23-1	73-TeCB	U	3.48	pg/g	3.48
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB		24.3	pg/g	3.48
70362-49-1	78-TeCB	U	3.48	pg/g	3.48
41464-48-6	79-TeCB	U	3.48	pg/g	3.48
33284-52-5	80-TeCB	U	3.48	pg/g	3.48
70362-50-4	81-TeCB	U	3.48	pg/g	3.48
52663-62-4	82-PeCB		4.00	pg/g	3.48
60145-20-2	83-PeCB	U	3.48	pg/g	3.48
52663-60-2	84-PeCB		10.7	pg/g	3.48
65510-45-4	85-PeCB	C	11.0	pg/g	10.4
55312-69-1	86-PeCB	C	33.5	pg/g	20.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	C	12.6	pg/g	6.96
73575-57-2	89-PeCB	U	3.48	pg/g	3.48
68194-07-0	90-PeCB	C	67.4	pg/g	10.4
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB		11.7	pg/g	3.48
73575-56-1	93-PeCB	CU	6.96	pg/g	6.96
73575-55-0	94-PeCB	U	3.48	pg/g	3.48
38379-99-6	95-PeCB		34.2	pg/g	3.48
73575-54-9	96-PeCB	U	3.48	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 4 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535020  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-25  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 22:00  
**Data File:** c27oct17a\_3-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 14:45  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 61.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	6.96	pg/g	6.96
38380-01-7	99-PeCB		62.5	pg/g	3.48
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	3.48	pg/g	3.48
56558-16-8	104-PeCB	U	3.48	pg/g	3.48
32598-14-4	105-PeCB		32.5	pg/g	3.48
70424-69-0	106-PeCB	U	3.48	pg/g	3.48
70424-68-9	107-PeCB		10.9	pg/g	3.48
70362-41-3	108-PeCB	CU	6.96	pg/g	6.96
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	C	66.3	pg/g	6.96
39635-32-0	111-PeCB	U	3.48	pg/g	3.48
74472-36-9	112-PeCB	U	3.48	pg/g	3.48
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	3.48	pg/g	3.48
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		109	pg/g	3.48
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	3.48	pg/g	3.48
56558-18-0	121-PeCB	U	3.48	pg/g	3.48
76842-07-4	122-PeCB	U	3.48	pg/g	3.48
65510-44-3	123-PeCB	U	3.48	pg/g	3.48
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	3.48	pg/g	3.48
39635-33-1	127-PeCB	U	3.48	pg/g	3.48
38380-07-3	128-HxCB	C	15.2	pg/g	6.96

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 11535020  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-25  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 22:00  
**Data File:** c27oct17a\_3-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 14:45  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 61.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	C	118	pg/g	10.4
52663-66-8	130-HxCB		7.78	pg/g	3.48
61798-70-7	131-HxCB	U	3.48	pg/g	3.48
38380-05-1	132-HxCB		18.2	pg/g	3.48
35694-04-3	133-HxCB		3.62	pg/g	3.48
52704-70-8	134-HxCB		4.05	pg/g	3.48
52744-13-5	135-HxCB	C	28.4	pg/g	6.96
38411-22-2	136-HxCB		8.66	pg/g	3.48
35694-06-5	137-HxCB	U	3.48	pg/g	3.48
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	6.96	pg/g	6.96
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB		6.46	pg/g	3.48
41411-61-4	142-HxCB	U	3.48	pg/g	3.48
68194-15-0	143-HxCB	U	3.48	pg/g	3.48
68194-14-9	144-HxCB	U	3.48	pg/g	3.48
74472-40-5	145-HxCB	U	3.48	pg/g	3.48
51908-16-8	146-HxCB		27.2	pg/g	3.48
68194-13-8	147-HxCB	C	75.0	pg/g	6.96
74472-41-6	148-HxCB	U	3.48	pg/g	3.48
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	3.48	pg/g	3.48
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	3.48	pg/g	3.48
35065-27-1	153-HxCB	C	132	pg/g	6.96
60145-22-4	154-HxCB		8.46	pg/g	3.48
33979-03-2	155-HxCB	U	3.48	pg/g	3.48
38380-08-4	156-HxCB	C	11.6	pg/g	6.96
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB		6.39	pg/g	3.48
39635-35-3	159-HxCB	U	3.48	pg/g	3.48
41411-62-5	160-HxCB	U	3.48	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 6 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 11535020  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-25  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 22:00  
**Data File:** c27oct17a\_3-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 14:45  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 61.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	3.48	pg/g	3.48
39635-34-2	162-HxCB	U	3.48	pg/g	3.48
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	3.48	pg/g	3.48
74472-46-1	165-HxCB	U	3.48	pg/g	3.48
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB		5.81	pg/g	3.48
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	3.48	pg/g	3.48
35065-30-6	170-HpCB		19.1	pg/g	3.48
52663-71-5	171-HpCB	C	7.13	pg/g	6.96
52663-74-8	172-HpCB		3.75	pg/g	3.48
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB		11.3	pg/g	3.48
40186-70-7	175-HpCB	U	3.48	pg/g	3.48
52663-65-7	176-HpCB	U	3.48	pg/g	3.48
52663-70-4	177-HpCB		20.5	pg/g	3.48
52663-67-9	178-HpCB		11.7	pg/g	3.48
52663-64-6	179-HpCB		13.4	pg/g	3.48
35065-29-3	180-HpCB	C	39.4	pg/g	6.96
74472-47-2	181-HpCB	U	3.48	pg/g	3.48
60145-23-5	182-HpCB	U	3.48	pg/g	3.48
52663-69-1	183-HpCB	C	16.0	pg/g	6.96
74472-48-3	184-HpCB	U	3.48	pg/g	3.48
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	3.48	pg/g	3.48
52663-68-0	187-HpCB		61.5	pg/g	3.48
74487-85-7	188-HpCB	U	3.48	pg/g	3.48
39635-31-9	189-HpCB	U	3.48	pg/g	3.48
41411-64-7	190-HpCB	U	3.48	pg/g	3.48
74472-50-7	191-HpCB	U	3.48	pg/g	3.48
74472-51-8	192-HpCB	U	3.48	pg/g	3.48

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

**SDG Number:** L1736278  
**Lab Sample ID:** 11535020  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-25  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 22:00  
**Data File:** c27oct17a\_3-6  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/06/2017 14:45  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 61.8  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB		15.5	pg/g	3.48
52663-78-2	195-OcCB	U	3.48	pg/g	3.48
42740-50-1	196-OcCB		10.4	pg/g	3.48
33091-17-7	197-OcCB	CU	6.96	pg/g	6.96
68194-17-2	198-OcCB	C	24.6	pg/g	6.96
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB		10.3	pg/g	3.48
2136-99-4	202-OcCB		18.7	pg/g	3.48
52663-76-0	203-OcCB		9.12	pg/g	3.48
74472-52-9	204-OcCB	U	3.48	pg/g	3.48
74472-53-0	205-OcCB	U	3.48	pg/g	3.48
40186-72-9	206-NoCB		37.0	pg/g	3.48
52663-79-3	207-NoCB		8.56	pg/g	3.48
52663-77-1	208-NoCB		27.3	pg/g	3.48
2051-24-3	209-DeCB		57.6	pg/g	3.48
1336-36-3	Total PCB Congeners		2390	pg/g	3.48

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		118	348	pg/g	33.8	(15%-150%)
13C-3-MoCB		133	348	pg/g	38.2	(15%-150%)
13C-4-DiCB		132	348	pg/g	38.1	(25%-150%)
13C-15-DiCB		197	348	pg/g	56.5	(25%-150%)
13C-19-TrCB		172	348	pg/g	49.3	(25%-150%)
13C-37-TrCB		164	348	pg/g	47.1	(25%-150%)
13C-54-TeCB		144	348	pg/g	41.3	(25%-150%)
13C-77-TeCB		187	348	pg/g	53.8	(25%-150%)
13C-81-TeCB		186	348	pg/g	53.5	(25%-150%)
13C-104-PeCB		186	348	pg/g	53.4	(25%-150%)
13C-105-PeCB		157	348	pg/g	45.1	(25%-150%)
13C-114-PeCB		162	348	pg/g	46.7	(25%-150%)
13C-118-PeCB		165	348	pg/g	47.3	(25%-150%)
13C-123-PeCB		168	348	pg/g	48.4	(25%-150%)
13C-126-PeCB		155	348	pg/g	44.5	(25%-150%)
13C-155-HxCB		170	348	pg/g	48.8	(25%-150%)
13C-156-HxCB	C	286	696	pg/g	41.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		150	348	pg/g	43.1	(25%-150%)
13C-169-HxCB		140	348	pg/g	40.1	(25%-150%)
13C-188-HpCB		210	348	pg/g	60.4	(25%-150%)
13C-189-HpCB		150	348	pg/g	43.0	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535020	<b>Date Collected:</b> 10/06/2017 14:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 61.8
<b>Client ID:</b> VC-IRB-25		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 22:00	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15.05 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			198	348	pg/g	56.9 (25%-150%)
13C-205-OcCB			181	348	pg/g	51.9 (25%-150%)
13C-206-NoCB			204	348	pg/g	58.7 (25%-150%)
13C-208-NoCB			195	348	pg/g	56.2 (25%-150%)
13C-209-DeCB			228	348	pg/g	65.4 (25%-150%)
13C-111-PeCB			289	348	pg/g	83.1 (30%-135%)
13C-28-TrCB			225	348	pg/g	64.6 (30%-135%)
13C-178-HpCB			338	348	pg/g	97.0 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

# Quality Control Summary

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019859	LCS for batch 36007	13C-1-MoCB		41.3	(15%-140%)
		13C-3-MoCB		49.4	(15%-140%)
		13C-4-DiCB		53.0	(30%-140%)
		13C-15-DiCB		82.9	(30%-140%)
		13C-19-TrCB		71.3	(30%-140%)
		13C-37-TrCB		76.7	(30%-140%)
		13C-54-TeCB		70.6	(30%-140%)
		13C-77-TeCB		84.6	(30%-140%)
		13C-81-TeCB		85.4	(30%-140%)
		13C-104-PeCB		89.9	(30%-140%)
		13C-105-PeCB		74.3	(30%-140%)
		13C-114-PeCB		76.6	(30%-140%)
		13C-118-PeCB		78.3	(30%-140%)
		13C-123-PeCB		80.5	(30%-140%)
		13C-126-PeCB		78.5	(30%-140%)
		13C-155-HxCB		84.3	(30%-140%)
		13C-156-HxCB		71.8	(30%-140%)
		13C-157-HxCB			
		13C-167-HxCB			
		13C-169-HxCB			
		13C-188-HpCB			
		13C-189-HpCB			
		13C-202-OcCB			
		13C-205-OcCB			
		13C-206-NoCB			
		13C-208-NoCB			
		13C-209-DeCB			
		13C-111-PeCB			
		13C-28-TrCB			
		13C-178-HpCB			
			C C156L		
				74.5	(30%-140%)
				71.5	(30%-140%)
				92.0	(30%-140%)
				69.5	(30%-140%)
				89.9	(30%-140%)
				88.8	(30%-140%)
				102	(30%-140%)
				91.7	(30%-140%)
				114	(30%-140%)
				83.6	(40%-125%)
				67.8	(40%-125%)
				103	(40%-125%)
12019860	LCSD for batch 36007	13C-1-MoCB		42.4	(15%-140%)
		13C-3-MoCB		49.2	(15%-140%)
		13C-4-DiCB		53.8	(30%-140%)
		13C-15-DiCB		83.5	(30%-140%)
		13C-19-TrCB		70.9	(30%-140%)
		13C-37-TrCB		81.9	(30%-140%)
		13C-54-TeCB		71.9	(30%-140%)
		13C-77-TeCB		93.8	(30%-140%)
		13C-81-TeCB		92.3	(30%-140%)
		13C-104-PeCB		91.8	(30%-140%)
		13C-105-PeCB		80.9	(30%-140%)
		13C-114-PeCB		82.3	(30%-140%)
		13C-118-PeCB		83.5	(30%-140%)
		13C-123-PeCB		86.2	(30%-140%)
		13C-126-PeCB		85.9	(30%-140%)
		13C-155-HxCB		83.1	(30%-140%)
		13C-156-HxCB		75.6	(30%-140%)
		13C-157-HxCB			
		13C-167-HxCB			
		13C-169-HxCB			
13C-188-HpCB					
13C-189-HpCB					
			C C156L		
				78.1	(30%-140%)
				77.4	(30%-140%)
				91.8	(30%-140%)
				73.3	(30%-140%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits		
12019860	LCSD for batch 36007	13C-202-OcCB		91.9	(30%-140%)		
		13C-205-OcCB		91.4	(30%-140%)		
		13C-206-NoCB		104	(30%-140%)		
		13C-208-NoCB		92.0	(30%-140%)		
		13C-209-DeCB		115	(30%-140%)		
		13C-111-PeCB		87.1	(40%-125%)		
		13C-28-TrCB		68.8	(40%-125%)		
		13C-178-HpCB		102	(40%-125%)		
12019858	MB for batch 36007	13C-1-MoCB		41.5	(15%-150%)		
		13C-3-MoCB		47.2	(15%-150%)		
		13C-4-DiCB		52.3	(25%-150%)		
		13C-15-DiCB		79.6	(25%-150%)		
		13C-19-TrCB		69.3	(25%-150%)		
		13C-37-TrCB		72.8	(25%-150%)		
		13C-54-TeCB		69.0	(25%-150%)		
		13C-77-TeCB		78.5	(25%-150%)		
		13C-81-TeCB		79.0	(25%-150%)		
		13C-104-PeCB		89.7	(25%-150%)		
		13C-105-PeCB		72.2	(25%-150%)		
		13C-114-PeCB		73.0	(25%-150%)		
		13C-118-PeCB		75.0	(25%-150%)		
		13C-123-PeCB		77.8	(25%-150%)		
		13C-126-PeCB		73.9	(25%-150%)		
		13C-155-HxCB		81.7	(25%-150%)		
		13C-156-HxCB	C C156L	69.4	(25%-150%)		
		13C-157-HxCB					
				13C-167-HxCB		72.3	(25%-150%)
				13C-169-HxCB		69.0	(25%-150%)
				13C-188-HpCB		88.4	(25%-150%)
				13C-189-HpCB		66.2	(25%-150%)
		13C-202-OcCB		86.4	(25%-150%)		
		13C-205-OcCB		85.4	(25%-150%)		
		13C-206-NoCB		98.1	(25%-150%)		
		13C-208-NoCB		87.7	(25%-150%)		
		13C-209-DeCB		109	(25%-150%)		
		13C-111-PeCB		79.2	(30%-135%)		
		13C-28-TrCB		65.9	(30%-135%)		
		13C-178-HpCB		97.6	(30%-135%)		
11535001	VC-IRB-01	13C-1-MoCB		40.2	(15%-150%)		
		13C-3-MoCB		45.7	(15%-150%)		
		13C-4-DiCB		48.5	(25%-150%)		
		13C-15-DiCB		69.0	(25%-150%)		
		13C-19-TrCB		61.3	(25%-150%)		
		13C-37-TrCB		62.5	(25%-150%)		
		13C-54-TeCB		55.3	(25%-150%)		
		13C-77-TeCB		73.1	(25%-150%)		
		13C-81-TeCB		73.2	(25%-150%)		
		13C-104-PeCB		65.6	(25%-150%)		
		13C-105-PeCB		61.1	(25%-150%)		
		13C-114-PeCB		62.4	(25%-150%)		
		13C-118-PeCB		63.1	(25%-150%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535001	VC-IRB-01	13C-123-PeCB		64.3	(25%-150%)
		13C-126-PeCB		62.0	(25%-150%)
		13C-155-HxCB		60.8	(25%-150%)
		13C-156-HxCB	C	55.6	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		57.3	(25%-150%)
		13C-169-HxCB		54.7	(25%-150%)
		13C-188-HpCB		69.3	(25%-150%)
		13C-189-HpCB		53.7	(25%-150%)
		13C-202-OcCB		67.6	(25%-150%)
		13C-205-OcCB		64.6	(25%-150%)
		13C-206-NoCB		72.1	(25%-150%)
		13C-208-NoCB		68.2	(25%-150%)
		13C-209-DeCB		81.4	(25%-150%)
		13C-111-PeCB		82.3	(30%-135%)
		13C-28-TrCB		65.4	(30%-135%)
		13C-178-HpCB		98.1	(30%-135%)
11535002	VC-IRB-02	13C-1-MoCB		27.9	(15%-150%)
		13C-3-MoCB		32.6	(15%-150%)
		13C-4-DiCB		32.8	(25%-150%)
		13C-15-DiCB		45.1	(25%-150%)
		13C-19-TrCB		39.8	(25%-150%)
		13C-37-TrCB		39.1	(25%-150%)
		13C-54-TeCB		37.4	(25%-150%)
		13C-77-TeCB		41.5	(25%-150%)
		13C-81-TeCB		37.1	(25%-150%)
		13C-104-PeCB		46.9	(25%-150%)
		13C-105-PeCB		36.7	(25%-150%)
		13C-114-PeCB		38.0	(25%-150%)
		13C-118-PeCB		39.5	(25%-150%)
		13C-123-PeCB		40.0	(25%-150%)
		13C-126-PeCB		37.1	(25%-150%)
		13C-155-HxCB		44.8	(25%-150%)
		13C-156-HxCB	C	36.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		37.4	(25%-150%)
		13C-169-HxCB		35.9	(25%-150%)
		13C-188-HpCB		51.5	(25%-150%)
		13C-189-HpCB		37.9	(25%-150%)
		13C-202-OcCB		49.5	(25%-150%)
13C-205-OcCB		46.9	(25%-150%)		
13C-206-NoCB		55.3	(25%-150%)		
13C-208-NoCB		50.9	(25%-150%)		
13C-209-DeCB		47.4	(25%-150%)		
13C-111-PeCB		78.8	(30%-135%)		
13C-28-TrCB		69.7	(30%-135%)		
13C-178-HpCB		96.7	(30%-135%)		
11535003	VC-IRB-03-S1	13C-1-MoCB		44.4	(15%-150%)
		13C-3-MoCB		51.6	(15%-150%)
		13C-4-DiCB		53.0	(25%-150%)
		13C-15-DiCB		76.6	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
11535003	VC-IRB-03-S1	13C-19-TrCB		67.9	(25%-150%)	
		13C-37-TrCB		65.4	(25%-150%)	
		13C-54-TeCB		60.1	(25%-150%)	
		13C-77-TeCB		75.1	(25%-150%)	
		13C-81-TeCB		75.3	(25%-150%)	
		13C-104-PeCB		75.1	(25%-150%)	
		13C-105-PeCB		63.7	(25%-150%)	
		13C-114-PeCB		64.8	(25%-150%)	
		13C-118-PeCB		66.8	(25%-150%)	
		13C-123-PeCB		68.5	(25%-150%)	
		13C-126-PeCB		63.8	(25%-150%)	
		13C-155-HxCB		66.7	(25%-150%)	
		13C-156-HxCB		57.3	(25%-150%)	
		13C-157-HxCB	C C156L			
		13C-167-HxCB		60.4	(25%-150%)	
		13C-169-HxCB		55.7	(25%-150%)	
		13C-188-HpCB		81.2	(25%-150%)	
		13C-189-HpCB		58.4	(25%-150%)	
		13C-202-OcCB		77.4	(25%-150%)	
		13C-205-OcCB		69.4	(25%-150%)	
		13C-206-NoCB		76.6	(25%-150%)	
		13C-208-NoCB		77.1	(25%-150%)	
		13C-209-DeCB		87.4	(25%-150%)	
		13C-111-PeCB		83.3	(30%-135%)	
		13C-28-TrCB		66.1	(30%-135%)	
		13C-178-HpCB		98.3	(30%-135%)	
11535004	VC-IRB-03-S2	13C-1-MoCB		33.5	(15%-150%)	
		13C-3-MoCB		37.2	(15%-150%)	
		13C-4-DiCB		39.2	(25%-150%)	
		13C-15-DiCB		55.1	(25%-150%)	
		13C-19-TrCB		49.1	(25%-150%)	
		13C-37-TrCB		49.3	(25%-150%)	
		13C-54-TeCB		43.1	(25%-150%)	
		13C-77-TeCB		57.6	(25%-150%)	
		13C-81-TeCB		51.3	(25%-150%)	
		13C-104-PeCB		60.7	(25%-150%)	
		13C-105-PeCB		53.3	(25%-150%)	
		13C-114-PeCB		55.6	(25%-150%)	
		13C-118-PeCB		57.0	(25%-150%)	
		13C-123-PeCB		59.4	(25%-150%)	
		13C-126-PeCB		53.7	(25%-150%)	
		13C-155-HxCB		58.0	(25%-150%)	
		13C-156-HxCB		50.6	(25%-150%)	
		13C-157-HxCB	C C156L			
		13C-167-HxCB		53.1	(25%-150%)	
		13C-169-HxCB		49.3	(25%-150%)	
		13C-188-HpCB		66.4	(25%-150%)	
		13C-189-HpCB		51.8	(25%-150%)	
		13C-202-OcCB		67.1	(25%-150%)	
		13C-205-OcCB		63.7	(25%-150%)	
		13C-206-NoCB		67.1	(25%-150%)	
		13C-208-NoCB		70.1	(25%-150%)	

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535004	VC-IRB-03-S2	13C-209-DeCB		65.8	(25%-150%)
		13C-111-PeCB		93.1	(30%-135%)
		13C-28-TrCB		71.1	(30%-135%)
		13C-178-HpCB		109	(30%-135%)
11535005	VC-IRB-04	13C-1-MoCB		38.7	(15%-150%)
		13C-3-MoCB		43.0	(15%-150%)
		13C-4-DiCB		45.4	(25%-150%)
		13C-15-DiCB		66.7	(25%-150%)
		13C-19-TrCB		58.6	(25%-150%)
		13C-37-TrCB		57.3	(25%-150%)
		13C-54-TeCB		54.4	(25%-150%)
		13C-77-TeCB		61.1	(25%-150%)
		13C-81-TeCB		55.8	(25%-150%)
		13C-104-PeCB		74.1	(25%-150%)
		13C-105-PeCB		56.8	(25%-150%)
		13C-114-PeCB		58.7	(25%-150%)
		13C-118-PeCB		60.0	(25%-150%)
		13C-123-PeCB		62.7	(25%-150%)
		13C-126-PeCB		55.6	(25%-150%)
		13C-155-HxCB		70.3	(25%-150%)
		13C-156-HxCB	C	53.7	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		56.6	(25%-150%)
		13C-169-HxCB		49.5	(25%-150%)
		13C-188-HpCB		86.0	(25%-150%)
		13C-189-HpCB		56.6	(25%-150%)
		13C-202-OcCB		80.8	(25%-150%)
		13C-205-OcCB		68.6	(25%-150%)
		13C-206-NoCB		67.3	(25%-150%)
		13C-208-NoCB		80.8	(25%-150%)
13C-209-DeCB		70.5	(25%-150%)		
13C-111-PeCB		84.1	(30%-135%)		
13C-28-TrCB		69.7	(30%-135%)		
13C-178-HpCB		103	(30%-135%)		
11535006	VC-IRB-05-S1	13C-1-MoCB		32.2	(15%-150%)
		13C-3-MoCB		37.1	(15%-150%)
		13C-4-DiCB		40.4	(25%-150%)
		13C-15-DiCB		57.2	(25%-150%)
		13C-19-TrCB		50.3	(25%-150%)
		13C-37-TrCB		49.1	(25%-150%)
		13C-54-TeCB		46.9	(25%-150%)
		13C-77-TeCB		53.3	(25%-150%)
		13C-81-TeCB		47.9	(25%-150%)
		13C-104-PeCB		62.2	(25%-150%)
		13C-105-PeCB		49.2	(25%-150%)
		13C-114-PeCB		50.4	(25%-150%)
		13C-118-PeCB		51.4	(25%-150%)
		13C-123-PeCB		52.8	(25%-150%)
		13C-126-PeCB		48.4	(25%-150%)
		13C-155-HxCB		58.0	(25%-150%)
13C-156-HxCB	C	47.1	(25%-150%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535006	VC-IRB-05-S1	13C-157-HxCB	C156L		
		13C-167-HxCB		48.7	(25%-150%)
		13C-169-HxCB		44.0	(25%-150%)
		13C-188-HpCB		69.6	(25%-150%)
		13C-189-HpCB		47.9	(25%-150%)
		13C-202-OcCB		66.8	(25%-150%)
		13C-205-OcCB		59.5	(25%-150%)
		13C-206-NoCB		65.9	(25%-150%)
		13C-208-NoCB		67.2	(25%-150%)
		13C-209-DeCB		58.6	(25%-150%)
		13C-111-PeCB		84.0	(30%-135%)
		13C-28-TrCB		69.1	(30%-135%)
		13C-178-HpCB		106	(30%-135%)
11535008	VC-IRB-06	13C-1-MoCB		26.8	(15%-150%)
		13C-3-MoCB		28.3	(15%-150%)
		13C-4-DiCB		29.4	(25%-150%)
		13C-15-DiCB		40.0	(25%-150%)
		13C-19-TrCB		36.9	(25%-150%)
		13C-37-TrCB		33.0	(25%-150%)
		13C-54-TeCB		29.8	(25%-150%)
		13C-77-TeCB		36.3	(25%-150%)
		13C-81-TeCB		36.1	(25%-150%)
		13C-104-PeCB		40.0	(25%-150%)
		13C-105-PeCB		32.0	(25%-150%)
		13C-114-PeCB		33.1	(25%-150%)
		13C-118-PeCB		33.6	(25%-150%)
		13C-123-PeCB		34.2	(25%-150%)
		13C-126-PeCB		30.0	(25%-150%)
		13C-155-HxCB		38.5	(25%-150%)
		13C-156-HxCB	C	30.0	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		31.5	(25%-150%)
		13C-169-HxCB		27.8	(25%-150%)
		13C-188-HpCB		45.7	(25%-150%)
		13C-189-HpCB		31.8	(25%-150%)
		13C-202-OcCB		43.3	(25%-150%)
13C-205-OcCB		38.3	(25%-150%)		
13C-206-NoCB		42.9	(25%-150%)		
13C-208-NoCB		44.5	(25%-150%)		
13C-209-DeCB		51.2	(25%-150%)		
13C-111-PeCB		70.3	(30%-135%)		
13C-28-TrCB		55.1	(30%-135%)		
13C-178-HpCB		87.2	(30%-135%)		
11535009	VC-IRB-07-ALT-S1	13C-1-MoCB		19.2	(15%-150%)
		13C-3-MoCB		22.6	(15%-150%)
		13C-4-DiCB		22.6 *	(25%-150%)
		13C-15-DiCB		35.6	(25%-150%)
		13C-19-TrCB		31.0	(25%-150%)
		13C-37-TrCB		32.5	(25%-150%)
		13C-54-TeCB		26.4	(25%-150%)
		13C-77-TeCB		38.9	(25%-150%)



**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
11535009	VC-IRB-07-ALT-S1	13C-81-TeCB		34.4	(25%-150%)	
		13C-104-PeCB		38.7	(25%-150%)	
		13C-105-PeCB		35.4	(25%-150%)	
		13C-114-PeCB		36.9	(25%-150%)	
		13C-118-PeCB		37.3	(25%-150%)	
		13C-123-PeCB		38.2	(25%-150%)	
		13C-126-PeCB		35.8	(25%-150%)	
		13C-155-HxCB		39.0	(25%-150%)	
		13C-156-HxCB	C	32.8	(25%-150%)	
		13C-157-HxCB	C156L			
		13C-167-HxCB		36.6	(25%-150%)	
		13C-169-HxCB		33.5	(25%-150%)	
		13C-188-HpCB		46.2	(25%-150%)	
		13C-189-HpCB		36.0	(25%-150%)	
		13C-202-OcCB		47.1	(25%-150%)	
		13C-205-OcCB		45.6	(25%-150%)	
		13C-206-NoCB		53.7	(25%-150%)	
		13C-208-NoCB		51.4	(25%-150%)	
		13C-209-DeCB		45.5	(25%-150%)	
		13C-111-PeCB		79.6	(30%-135%)	
13C-28-TrCB		61.6	(30%-135%)			
13C-178-HpCB		87.9	(30%-135%)			
11535010	VC-IRB-07-ALT-S2	13C-1-MoCB		42.3	(15%-150%)	
		13C-3-MoCB		49.2	(15%-150%)	
		13C-4-DiCB		50.5	(25%-150%)	
		13C-15-DiCB		84.5	(25%-150%)	
		13C-19-TrCB		72.6	(25%-150%)	
		13C-37-TrCB		74.8	(25%-150%)	
		13C-54-TeCB		65.4	(25%-150%)	
		13C-77-TeCB		82.1	(25%-150%)	
		13C-81-TeCB		82.4	(25%-150%)	
		13C-104-PeCB		88.6	(25%-150%)	
		13C-105-PeCB		72.0	(25%-150%)	
		13C-114-PeCB		73.4	(25%-150%)	
		13C-118-PeCB		75.2	(25%-150%)	
		13C-123-PeCB		77.2	(25%-150%)	
		13C-126-PeCB		71.7	(25%-150%)	
		13C-155-HxCB		82.2	(25%-150%)	
		13C-156-HxCB	C	67.4	(25%-150%)	
		13C-157-HxCB	C156L			
		13C-167-HxCB		70.7	(25%-150%)	
		13C-169-HxCB		65.0	(25%-150%)	
13C-188-HpCB		93.3	(25%-150%)			
13C-189-HpCB		67.3	(25%-150%)			
13C-202-OcCB		91.1	(25%-150%)			
13C-205-OcCB		82.2	(25%-150%)			
13C-206-NoCB		93.5	(25%-150%)			
13C-208-NoCB		91.9	(25%-150%)			
13C-209-DeCB		104	(25%-150%)			
13C-111-PeCB		82.7	(30%-135%)			
13C-28-TrCB		62.9	(30%-135%)			
13C-178-HpCB		100	(30%-135%)			

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535011	VC-IRB-08-ALT-S1	13C-1-MoCB		25.5	(15%-150%)
		13C-3-MoCB		29.5	(15%-150%)
		13C-4-DiCB		30.7	(25%-150%)
		13C-15-DiCB		53.9	(25%-150%)
		13C-19-TrCB		45.8	(25%-150%)
		13C-37-TrCB		48.1	(25%-150%)
		13C-54-TeCB		38.7	(25%-150%)
		13C-77-TeCB		59.8	(25%-150%)
		13C-81-TeCB		59.9	(25%-150%)
		13C-104-PeCB		51.3	(25%-150%)
		13C-105-PeCB		48.9	(25%-150%)
		13C-114-PeCB		49.9	(25%-150%)
		13C-118-PeCB		50.5	(25%-150%)
		13C-123-PeCB		51.6	(25%-150%)
		13C-126-PeCB		48.0	(25%-150%)
		13C-155-HxCB		49.6	(25%-150%)
		13C-156-HxCB	C	44.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		46.2	(25%-150%)
		13C-169-HxCB		43.0	(25%-150%)
		13C-188-HpCB		61.2	(25%-150%)
		13C-189-HpCB		44.9	(25%-150%)
		13C-202-OcCB		60.0	(25%-150%)
		13C-205-OcCB		54.3	(25%-150%)
		13C-206-NoCB		59.8	(25%-150%)
		13C-208-NoCB		60.7	(25%-150%)
		13C-209-DeCB		71.9	(25%-150%)
		13C-111-PeCB		85.3	(30%-135%)
		13C-28-TrCB		62.8	(30%-135%)
		13C-178-HpCB		100	(30%-135%)
11535012	VC-IRB-08-ALT-S2	13C-1-MoCB		18.6	(15%-150%)
		13C-3-MoCB		20.8	(15%-150%)
		13C-4-DiCB		21.8 *	(25%-150%)
		13C-15-DiCB		35.9	(25%-150%)
		13C-19-TrCB		30.4	(25%-150%)
		13C-37-TrCB		32.7	(25%-150%)
		13C-54-TeCB		26.6	(25%-150%)
		13C-77-TeCB		40.2	(25%-150%)
		13C-81-TeCB		40.3	(25%-150%)
		13C-104-PeCB		39.6	(25%-150%)
		13C-105-PeCB		37.5	(25%-150%)
		13C-114-PeCB		38.2	(25%-150%)
		13C-118-PeCB		38.7	(25%-150%)
		13C-123-PeCB		39.7	(25%-150%)
		13C-126-PeCB		37.6	(25%-150%)
		13C-155-HxCB		38.3	(25%-150%)
		13C-156-HxCB	C	32.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		36.8	(25%-150%)
		13C-169-HxCB		33.1	(25%-150%)
13C-188-HpCB		43.7	(25%-150%)		
13C-189-HpCB		35.5	(25%-150%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535012	VC-IRB-08-ALT-S2	13C-202-OcCB		44.5	(25%-150%)
		13C-205-OcCB		43.9	(25%-150%)
		13C-206-NoCB		50.9	(25%-150%)
		13C-208-NoCB		47.9	(25%-150%)
		13C-209-DeCB		47.7	(25%-150%)
		13C-111-PeCB		76.6	(30%-135%)
		13C-28-TrCB		58.5	(30%-135%)
		13C-178-HpCB		81.4	(30%-135%)
11535013	VC-IRB-08-ALT-S3	13C-1-MoCB		38.0	(15%-150%)
		13C-3-MoCB		43.7	(15%-150%)
		13C-4-DiCB		45.8	(25%-150%)
		13C-15-DiCB		76.5	(25%-150%)
		13C-19-TrCB		64.2	(25%-150%)
		13C-37-TrCB		72.8	(25%-150%)
		13C-54-TeCB		60.2	(25%-150%)
		13C-77-TeCB		82.2	(25%-150%)
		13C-81-TeCB		82.0	(25%-150%)
		13C-104-PeCB		80.1	(25%-150%)
		13C-105-PeCB		68.9	(25%-150%)
		13C-114-PeCB		70.6	(25%-150%)
		13C-118-PeCB		71.4	(25%-150%)
		13C-123-PeCB		73.6	(25%-150%)
		13C-126-PeCB		68.4	(25%-150%)
		13C-155-HxCB		75.6	(25%-150%)
		13C-156-HxCB	C C156L	64.8	(25%-150%)
		13C-157-HxCB			
		13C-167-HxCB		67.1	(25%-150%)
		13C-169-HxCB		66.0	(25%-150%)
		13C-188-HpCB		84.9	(25%-150%)
		13C-189-HpCB		64.4	(25%-150%)
		13C-202-OcCB		82.6	(25%-150%)
13C-205-OcCB		78.2	(25%-150%)		
13C-206-NoCB		88.4	(25%-150%)		
13C-208-NoCB		83.6	(25%-150%)		
13C-209-DeCB		86.2	(25%-150%)		
13C-111-PeCB		78.1	(30%-135%)		
13C-28-TrCB		60.1	(30%-135%)		
13C-178-HpCB		92.4	(30%-135%)		
11535014	VC-IRB-09-ALT	13C-1-MoCB		14.0 *	(15%-150%)
		13C-3-MoCB		16.9	(15%-150%)
		13C-4-DiCB		17.4 *	(25%-150%)
		13C-15-DiCB		31.4	(25%-150%)
		13C-19-TrCB		28.2	(25%-150%)
		13C-37-TrCB		32.4	(25%-150%)
		13C-54-TeCB		28.5	(25%-150%)
		13C-77-TeCB		36.2	(25%-150%)
		13C-81-TeCB		36.3	(25%-150%)
		13C-104-PeCB		45.6	(25%-150%)
		13C-105-PeCB		37.1	(25%-150%)
		13C-114-PeCB		37.9	(25%-150%)
		13C-118-PeCB		39.1	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535014	VC-IRB-09-ALT	13C-123-PeCB		40.2	(25%-150%)
		13C-126-PeCB		35.1	(25%-150%)
		13C-155-HxCB		47.7	(25%-150%)
		13C-156-HxCB	C	37.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		38.8	(25%-150%)
		13C-169-HxCB		33.6	(25%-150%)
		13C-188-HpCB		61.6	(25%-150%)
		13C-189-HpCB		41.1	(25%-150%)
		13C-202-OcCB		59.8	(25%-150%)
		13C-205-OcCB		50.9	(25%-150%)
		13C-206-NoCB		62.2	(25%-150%)
		13C-208-NoCB		62.1	(25%-150%)
		13C-209-DeCB		71.3	(25%-150%)
		13C-111-PeCB		81.7	(30%-135%)
		13C-28-TrCB		71.2	(30%-135%)
		13C-178-HpCB		103	(30%-135%)
11535015	VC-IRB-10	13C-1-MoCB		24.1	(15%-150%)
		13C-3-MoCB		27.5	(15%-150%)
		13C-4-DiCB		27.6	(25%-150%)
		13C-15-DiCB		46.0	(25%-150%)
		13C-19-TrCB		40.2	(25%-150%)
		13C-37-TrCB		41.1	(25%-150%)
		13C-54-TeCB		38.3	(25%-150%)
		13C-77-TeCB		46.9	(25%-150%)
		13C-81-TeCB		46.3	(25%-150%)
		13C-104-PeCB		52.5	(25%-150%)
		13C-105-PeCB		43.1	(25%-150%)
		13C-114-PeCB		44.1	(25%-150%)
		13C-118-PeCB		44.2	(25%-150%)
		13C-123-PeCB		46.1	(25%-150%)
		13C-126-PeCB		40.6	(25%-150%)
		13C-155-HxCB		52.4	(25%-150%)
		13C-156-HxCB	C	41.5	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		43.1	(25%-150%)
		13C-169-HxCB		36.9	(25%-150%)
		13C-188-HpCB		67.0	(25%-150%)
		13C-189-HpCB		43.2	(25%-150%)
		13C-202-OcCB		63.8	(25%-150%)
13C-205-OcCB		53.1	(25%-150%)		
13C-206-NoCB		62.8	(25%-150%)		
13C-208-NoCB		64.3	(25%-150%)		
13C-209-DeCB		72.8	(25%-150%)		
13C-111-PeCB		71.1	(30%-135%)		
13C-28-TrCB		58.0	(30%-135%)		
13C-178-HpCB		88.9	(30%-135%)		
11535016	VC-IRB-10 MS	13C-1-MoCB		39.2	(15%-150%)
		13C-3-MoCB		43.3	(15%-150%)
		13C-4-DiCB		43.2	(25%-150%)
		13C-15-DiCB		67.1	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535016	VC-IRB-10 MS	13C-19-TrCB		60.4	(25%-150%)
		13C-37-TrCB		54.8	(25%-150%)
		13C-54-TeCB		58.4	(25%-150%)
		13C-77-TeCB		58.3	(25%-150%)
		13C-81-TeCB		58.9	(25%-150%)
		13C-104-PeCB		76.3	(25%-150%)
		13C-105-PeCB		54.9	(25%-150%)
		13C-114-PeCB		56.2	(25%-150%)
		13C-118-PeCB		58.3	(25%-150%)
		13C-123-PeCB		59.6	(25%-150%)
		13C-126-PeCB		52.6	(25%-150%)
		13C-155-HxCB		74.6	(25%-150%)
		13C-156-HxCB	C	54.9	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		57.5	(25%-150%)
		13C-169-HxCB		50.2	(25%-150%)
		13C-188-HpCB		90.5	(25%-150%)
		13C-189-HpCB		58.0	(25%-150%)
		13C-202-OcCB		85.1	(25%-150%)
		13C-205-OcCB		71.5	(25%-150%)
		13C-206-NoCB		83.6	(25%-150%)
		13C-208-NoCB		84.1	(25%-150%)
		13C-209-DeCB		94.9	(25%-150%)
		13C-111-PeCB		78.1	(30%-135%)
		13C-28-TrCB		68.7	(30%-135%)
		13C-178-HpCB		100	(30%-135%)
11535017	VC-IRB-10 MSD	13C-1-MoCB		38.5	(15%-150%)
		13C-3-MoCB		43.6	(15%-150%)
		13C-4-DiCB		43.6	(25%-150%)
		13C-15-DiCB		70.8	(25%-150%)
		13C-19-TrCB		61.4	(25%-150%)
		13C-37-TrCB		58.7	(25%-150%)
		13C-54-TeCB		55.7	(25%-150%)
		13C-77-TeCB		62.9	(25%-150%)
		13C-81-TeCB		63.9	(25%-150%)
		13C-104-PeCB		74.5	(25%-150%)
		13C-105-PeCB		56.2	(25%-150%)
		13C-114-PeCB		57.7	(25%-150%)
		13C-118-PeCB		58.6	(25%-150%)
		13C-123-PeCB		60.5	(25%-150%)
		13C-126-PeCB		52.8	(25%-150%)
		13C-155-HxCB		74.2	(25%-150%)
		13C-156-HxCB	C	53.4	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		56.3	(25%-150%)
		13C-169-HxCB		46.9	(25%-150%)
		13C-188-HpCB		94.0	(25%-150%)
		13C-189-HpCB		57.2	(25%-150%)
		13C-202-OcCB		87.7	(25%-150%)
		13C-205-OcCB		68.5	(25%-150%)
		13C-206-NoCB		81.5	(25%-150%)
		13C-208-NoCB		85.2	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535017	VC-IRB-10 MSD	13C-209-DeCB		92.4	
		13C-111-PeCB		74.0	(30%-135%)
		13C-28-TrCB		60.4	(30%-135%)
		13C-178-HpCB		94.0	(30%-135%)
11535018	VC-IRB-12-S1	13C-1-MoCB		34.6	(15%-150%)
		13C-3-MoCB		45.5	(15%-150%)
		13C-4-DiCB		46.0	(25%-150%)
		13C-15-DiCB		77.8	(25%-150%)
		13C-19-TrCB		67.9	(25%-150%)
		13C-37-TrCB		64.6	(25%-150%)
		13C-54-TeCB		63.9	(25%-150%)
		13C-77-TeCB		66.6	(25%-150%)
		13C-81-TeCB		67.8	(25%-150%)
		13C-104-PeCB		84.5	(25%-150%)
		13C-105-PeCB		61.1	(25%-150%)
		13C-114-PeCB		62.6	(25%-150%)
		13C-118-PeCB		63.3	(25%-150%)
		13C-123-PeCB		64.9	(25%-150%)
		13C-126-PeCB		56.1	(25%-150%)
		13C-155-HxCB		84.5	(25%-150%)
		13C-156-HxCB		58.6	(25%-150%)
		13C-157-HxCB	C		
		13C-167-HxCB	C156L	61.6	(25%-150%)
		13C-169-HxCB		51.3	(25%-150%)
		13C-188-HpCB		104	(25%-150%)
		13C-189-HpCB		61.7	(25%-150%)
		13C-202-OcCB		93.3	(25%-150%)
		13C-205-OcCB		76.0	(25%-150%)
		13C-206-NoCB		90.3	(25%-150%)
		13C-208-NoCB		89.6	(25%-150%)
13C-209-DeCB		101	(25%-150%)		
13C-111-PeCB		78.2	(30%-135%)		
13C-28-TrCB		66.4	(30%-135%)		
13C-178-HpCB		100	(30%-135%)		
11535019	VC-IRB-12-S2	13C-1-MoCB		34.8	(15%-150%)
		13C-3-MoCB		38.7	(15%-150%)
		13C-4-DiCB		39.1	(25%-150%)
		13C-15-DiCB		61.8	(25%-150%)
		13C-19-TrCB		53.0	(25%-150%)
		13C-37-TrCB		51.8	(25%-150%)
		13C-54-TeCB		46.0	(25%-150%)
		13C-77-TeCB		58.8	(25%-150%)
		13C-81-TeCB		59.0	(25%-150%)
		13C-104-PeCB		60.3	(25%-150%)
		13C-105-PeCB		50.1	(25%-150%)
		13C-114-PeCB		51.5	(25%-150%)
		13C-118-PeCB		53.0	(25%-150%)
		13C-123-PeCB		53.6	(25%-150%)
		13C-126-PeCB		48.0	(25%-150%)
		13C-155-HxCB		56.3	(25%-150%)
13C-156-HxCB	C	45.9	(25%-150%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535019	VC-IRB-12-S2	13C-157-HxCB	C156L		
		13C-167-HxCB		48.5	(25%-150%)
		13C-169-HxCB		42.7	(25%-150%)
		13C-188-HpCB		69.1	(25%-150%)
		13C-189-HpCB		47.3	(25%-150%)
		13C-202-OcCB		66.6	(25%-150%)
		13C-205-OcCB		58.5	(25%-150%)
		13C-206-NoCB		67.6	(25%-150%)
		13C-208-NoCB		66.2	(25%-150%)
		13C-209-DeCB		77.6	(25%-150%)
		13C-111-PeCB		84.9	(30%-135%)
		13C-28-TrCB		66.5	(30%-135%)
		13C-178-HpCB		103	(30%-135%)
11535020	VC-IRB-25	13C-1-MoCB		33.8	(15%-150%)
		13C-3-MoCB		38.2	(15%-150%)
		13C-4-DiCB		38.1	(25%-150%)
		13C-15-DiCB		56.5	(25%-150%)
		13C-19-TrCB		49.3	(25%-150%)
		13C-37-TrCB		47.1	(25%-150%)
		13C-54-TeCB		41.3	(25%-150%)
		13C-77-TeCB		53.8	(25%-150%)
		13C-81-TeCB		53.5	(25%-150%)
		13C-104-PeCB		53.4	(25%-150%)
		13C-105-PeCB		45.1	(25%-150%)
		13C-114-PeCB		46.7	(25%-150%)
		13C-118-PeCB		47.3	(25%-150%)
		13C-123-PeCB		48.4	(25%-150%)
		13C-126-PeCB		44.5	(25%-150%)
		13C-155-HxCB		48.8	(25%-150%)
		13C-156-HxCB	C	41.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		43.1	(25%-150%)
		13C-169-HxCB		40.1	(25%-150%)
		13C-188-HpCB		60.4	(25%-150%)
		13C-189-HpCB		43.0	(25%-150%)
		13C-202-OcCB		56.9	(25%-150%)
13C-205-OcCB		51.9	(25%-150%)		
13C-206-NoCB		58.7	(25%-150%)		
13C-208-NoCB		56.2	(25%-150%)		
13C-209-DeCB		65.4	(25%-150%)		
13C-111-PeCB		83.1	(30%-135%)		
13C-28-TrCB		64.6	(30%-135%)		
13C-178-HpCB		97.0	(30%-135%)		
11535007	VC-IRB-05-S2	13C-1-MoCB		23.9	(15%-150%)
		13C-3-MoCB		28.8	(15%-150%)
		13C-4-DiCB		30.8	(25%-150%)
		13C-15-DiCB		52.6	(25%-150%)
		13C-19-TrCB		44.7	(25%-150%)
		13C-37-TrCB		42.3	(25%-150%)
		13C-54-TeCB		34.8	(25%-150%)
		13C-77-TeCB		37.6	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736278

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11535007	VC-IRB-05-S2	13C-81-TeCB		62.2	(25%-150%)
		13C-104-PeCB		43.6	(25%-150%)
		13C-105-PeCB		49.4	(25%-150%)
		13C-114-PeCB		47.3	(25%-150%)
		13C-118-PeCB		44.3	(25%-150%)
		13C-123-PeCB		51.0	(25%-150%)
		13C-126-PeCB		47.9	(25%-150%)
		13C-155-HxCB		44.3	(25%-150%)
		13C-156-HxCB	C	32.0	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		44.2	(25%-150%)
		13C-169-HxCB		15.4 *	(25%-150%)
		13C-188-HpCB		59.7	(25%-150%)
		13C-189-HpCB		38.4	(25%-150%)
		13C-202-OcCB		65.5	(25%-150%)
		13C-205-OcCB		49.8	(25%-150%)
		13C-206-NoCB		54.5	(25%-150%)
		13C-208-NoCB		58.9	(25%-150%)
		13C-209-DeCB		66.6	(25%-150%)
		13C-111-PeCB		58.5	(30%-135%)
		13C-28-TrCB		67.7	(30%-135%)
		13C-178-HpCB		70.7	(30%-135%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted



**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1736278  
**Client ID:** VC-IRB-10 MS  
**Lab Sample ID:** 11535016  
**Instrument:** HRP791  
**Analyst:** MLS

**Sample Type:** Matrix Spike  
**Matrix:** SOIL  
**%Moisture:** 42.8  
**Analysis Date:** 10/28/2017 15:07  
**Prep Batch ID:** 36007  
**Batch ID:** 36009

Dilution: 1

CAS No.	Parmname	Amount Added		Spike Conc.	Recovery %	Acceptance Limits	
		pg/g		pg/g			
2051-60-7	MS	1-MoCB	58.3	U	59.1	101	50-150
2051-62-9	MS	3-MoCB	58.3	U	67.6	116	50-150
13029-08-8	MS	4-DiCB	58.3	U	62.0	106	50-150
2050-68-2	MS	15-DiCB	58.3		83.7	127	50-150
38444-73-4	MS	19-TrCB	58.3	U	58.7	101	50-150
38444-90-5	MS	37-TrCB	58.3		68.3	106	50-150
15968-05-5	MS	54-TeCB	117	U	109	93.3	50-150
32598-13-3	MS	77-TeCB	117		118	99	50-150
70362-50-4	MS	81-TeCB	117	U	126	108	50-150
56558-16-8	MS	104-PeCB	117	U	114	97.6	50-150
32598-14-4	MS	105-PeCB	117		147	123	50-150
74472-37-0	MS	114-PeCB	117	U	135	116	50-150
31508-00-6	MS	118-PeCB	117		138	108	50-150
65510-44-3	MS	123-PeCB	117	U	119	102	50-150
57465-28-8	MS	126-PeCB	117	U	141	121	50-150
33979-03-2	MS	155-HxCB	117	U	123	106	50-150
38380-08-4	MS	156-HxCB	233	CU	280	120	50-150
69782-90-7	MS	157-HxCB		C156			
52663-72-6	MS	167-HxCB	117	U	141	121	50-150
32774-16-6	MS	169-HxCB	117	U	134	115	50-150
74487-85-7	MS	188-HpCB	117	U	114	97.7	50-150
39635-31-9	MS	189-HpCB	117	U	132	113	50-150
2136-99-4	MS	202-OcCB	175		178	98.4	50-150
74472-53-0	MS	205-OcCB	175	U	174	99.3	50-150
40186-72-9	MS	206-NoCB	175		177	84.7	50-150
52663-77-1	MS	208-NoCB	175		191	103	50-150
2051-24-3	MS	209-DeCB	175		191	104	50-150

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 2 of 2

SDG Number: L1736278

Sample Type: Matrix Spike Duplicate

Client ID: VC-IRB-10 MSD

Matrix: SOIL

Lab Sample ID: 11535017

%Moisture: 42.8

Instrument: HRP791

Analysis Date: 10/28/2017 18:40

Dilution: 1

Analyst: MLS

Prep Batch ID: 36007

Batch ID: 36009

CAS No.	Parmname	Amount Added		Spike	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
		pg/g		Conc. pg/g				
2051-60-7	MSD 1-MoCB	58.3	U	60.2	103	50-150	1.90	0-25
2051-62-9	MSD 3-MoCB	58.3	U	66.1	113	50-150	2.25	0-25
13029-08-8	MSD 4-DiCB	58.3	U	64.1	110	50-150	3.34	0-25
2050-68-2	MSD 15-DiCB	58.3		81.1	123	50-150	3.17	0-25
38444-73-4	MSD 19-TrCB	58.3	U	59.9	103	50-150	2.11	0-25
38444-90-5	MSD 37-TrCB	58.3		66.3	103	50-150	2.93	0-25
15968-05-5	MSD 54-TeCB	117	U	112	95.9	50-150	2.75	0-25
32598-13-3	MSD 77-TeCB	117		119	99.8	50-150	0.720	0-25
70362-50-4	MSD 81-TeCB	117	U	128	110	50-150	1.63	0-25
56558-16-8	MSD 104-PeCB	117	U	117	100	50-150	2.60	0-25
32598-14-4	MSD 105-PeCB	117		144	121	50-150	1.96	0-25
74472-37-0	MSD 114-PeCB	117	U	136	117	50-150	0.873	0-25
31508-00-6	MSD 118-PeCB	117		141	110	50-150	2.15	0-25
65510-44-3	MSD 123-PeCB	117	U	120	102	50-150	0.638	0-25
57465-28-8	MSD 126-PeCB	117	U	142	122	50-150	0.372	0-25
33979-03-2	MSD 155-HxCB	117	U	127	108	50-150	2.49	0-25
38380-08-4	MSD 156-HxCB	233	CU	282	121	50-150	0.637	0-25
69782-90-7	MSD 157-HxCB		C156					
52663-72-6	MSD 167-HxCB	117	U	142	122	50-150	1.04	0-25
32774-16-6	MSD 169-HxCB	117	U	134	115	50-150	0.277	0-25
74487-85-7	MSD 188-HpCB	117	U	117	101	50-150	2.87	0-25
39635-31-9	MSD 189-HpCB	117	U	133	114	50-150	0.869	0-25
2136-99-4	MSD 202-OcCB	175		181	99.8	50-150	1.40	0-25
74472-53-0	MSD 205-OcCB	175	U	176	100	50-150	1.09	0-25
40186-72-9	MSD 206-NoCB	175		172	82	50-150	2.74	0-25
52663-77-1	MSD 208-NoCB	175		191	103	50-150	0.0415	0-25
2051-24-3	MSD 209-DeCB	175		189	102	50-150	1.17	0-25

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

<b>SDG Number:</b> L1736278	<b>Sample Type:</b> Laboratory Control Sample
<b>Client ID:</b> LCS for batch 36007	<b>Matrix:</b> SOIL
<b>Lab Sample ID:</b> 12019859	
<b>Instrument:</b> HRP791	<b>Analysis Date:</b> 10/27/2017 16:42
<b>Analyst:</b> MLS	<b>Dilution:</b> 1
	<b>Prep Batch ID:</b> 36007
	<b>Batch ID:</b> 36009

CAS No.	Parmname	Amount	Spike	Recovery Acceptance	
		Added pg/g	Conc. pg/g	%	Limits
2051-60-7	LCS 1-MoCB	50.0	49.3	98.7	50-150
2051-62-9	LCS 3-MoCB	50.0	52.1	104	50-150
13029-08-8	LCS 4-DiCB	50.0	48.2	96.4	50-150
2050-68-2	LCS 15-DiCB	50.0	59.7	119	50-150
38444-73-4	LCS 19-TrCB	50.0	48.5	96.9	50-150
38444-90-5	LCS 37-TrCB	50.0	51.4	103	50-150
15968-05-5	LCS 54-TeCB	100	92.4	92.4	50-150
32598-13-3	LCS 77-TeCB	100	97.0	97	50-150
70362-50-4	LCS 81-TeCB	100	106	106	50-150
56558-16-8	LCS 104-PeCB	100	97.2	97.2	50-150
32598-14-4	LCS 105-PeCB	100	119	119	50-150
74472-37-0	LCS 114-PeCB	100	113	113	50-150
31508-00-6	LCS 118-PeCB	100	104	104	50-150
65510-44-3	LCS 123-PeCB	100	98.6	98.6	50-150
57465-28-8	LCS 126-PeCB	100	117	117	50-150
33979-03-2	LCS 155-HxCB	100	100	100	50-150
38380-08-4	LCS 156-HxCB	200	232	116	50-150
69782-90-7	LCS 157-HxCB		C C156		
52663-72-6	LCS 167-HxCB	100	117	117	50-150
32774-16-6	LCS 169-HxCB	100	111	111	50-150
74487-85-7	LCS 188-HpCB	100	95.8	95.8	50-150
39635-31-9	LCS 189-HpCB	100	113	113	50-150
2136-99-4	LCS 202-OcCB	150	147	97.9	50-150
74472-53-0	LCS 205-OcCB	150	146	97.4	50-150
40186-72-9	LCS 206-NoCB	150	142	94.3	50-150
52663-77-1	LCS 208-NoCB	150	154	103	50-150
2051-24-3	LCS 209-DeCB	150	151	101	50-150

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 2 of 2

**SDG Number:** L1736278  
**Client ID:** LCSD for batch 36007  
**Lab Sample ID:** 12019860  
**Instrument:** HRP791  
**Analyst:** MLS

**Sample Type:** Laboratory Control Sample Duplicate  
**Matrix:** SOIL  
**Analysis Date:** 10/27/2017 17:49  
**Prep Batch ID:** 36007  
**Batch ID:** 36009  
**Dilution:** 1

CAS No.	Parmname	Amount		Spike		Recovery Acceptance		RPD Acceptance	
		Added	pg/g	Conc.	pg/g	%	Limits	%	Limits
2051-60-7	LCSD 1-MoCB	50.0	50.0	50.1	100	50-150	1.49	0-20	
2051-62-9	LCSD 3-MoCB	50.0	50.0	53.3	107	50-150	2.24	0-20	
13029-08-8	LCSD 4-DiCB	50.0	50.0	49.2	98.3	50-150	2.05	0-20	
2050-68-2	LCSD 15-DiCB	50.0	50.0	57.5	115	50-150	3.70	0-20	
38444-73-4	LCSD 19-TrCB	50.0	50.0	50.9	102	50-150	4.83	0-20	
38444-90-5	LCSD 37-TrCB	50.0	50.0	51.3	103	50-150	0.362	0-20	
15968-05-5	LCSD 54-TeCB	100	100	94.3	94.3	50-150	2.14	0-20	
32598-13-3	LCSD 77-TeCB	100	100	96.5	96.5	50-150	0.486	0-20	
70362-50-4	LCSD 81-TeCB	100	100	107	107	50-150	0.662	0-20	
56558-16-8	LCSD 104-PeCB	100	100	97.1	97.1	50-150	0.105	0-20	
32598-14-4	LCSD 105-PeCB	100	100	118	118	50-150	0.881	0-20	
74472-37-0	LCSD 114-PeCB	100	100	112	112	50-150	0.925	0-20	
31508-00-6	LCSD 118-PeCB	100	100	106	106	50-150	1.62	0-20	
65510-44-3	LCSD 123-PeCB	100	100	98.0	98	50-150	0.594	0-20	
57465-28-8	LCSD 126-PeCB	100	100	115	115	50-150	1.21	0-20	
33979-03-2	LCSD 155-HxCB	100	100	105	105	50-150	4.77	0-20	
38380-08-4	LCSD 156-HxCB	200	C	233	117	50-150	0.495	0-20	
69782-90-7	LCSD 157-HxCB		C156						
52663-72-6	LCSD 167-HxCB	100	100	117	117	50-150	0.130	0-20	
32774-16-6	LCSD 169-HxCB	100	100	113	113	50-150	1.87	0-20	
74487-85-7	LCSD 188-HpCB	100	100	95.8	95.8	50-150	0.00209	0-20	
39635-31-9	LCSD 189-HpCB	100	100	111	111	50-150	0.936	0-20	
2136-99-4	LCSD 202-OcCB	150	150	148	98.5	50-150	0.565	0-20	
74472-53-0	LCSD 205-OcCB	150	150	146	97.5	50-150	0.0944	0-20	
40186-72-9	LCSD 206-NoCB	150	150	141	93.8	50-150	0.561	0-20	
52663-77-1	LCSD 208-NoCB	150	150	156	104	50-150	1.47	0-20	
2051-24-3	LCSD 209-DeCB	150	150	149	99.4	50-150	1.15	0-20	

## Method Blank Summary

Page 1 of 1

SDG Number: L1736278  
 Client ID: MB for batch 36007  
 Lab Sample ID: 12019858  
 Column:

Client: ALPH001  
 Instrument ID:  
 Prep Date: 25-OCT-17

Matrix: SOIL  
 Data File: c27oct17a-4  
 Analyzed: 10/27/17 18:55

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 36007	12019859	c27oct17a-2	10/27/17	1642
02 LCSD for batch 36007	12019860	c27oct17a-3	10/27/17	1749
03 VC-IRB-01	11535001	c27oct17a-5	10/27/17	2002
04 VC-IRB-02	11535002	c27oct17a-6	10/27/17	2109
05 VC-IRB-03-S1	11535003	c27oct17a-7	10/27/17	2215
06 VC-IRB-03-S2	11535004	c27oct17a-8	10/27/17	2322
07 VC-IRB-04	11535005	c27oct17a-9	10/28/17	0029
08 VC-IRB-05-S1	11535006	c27oct17a-10	10/28/17	0135
09 VC-IRB-06	11535008	c27oct17a_2-3	10/28/17	0614
10 VC-IRB-07-ALT-S1	11535009	c27oct17a_2-4	10/28/17	0721
11 VC-IRB-07-ALT-S2	11535010	c27oct17a_2-5	10/28/17	0828
12 VC-IRB-08-ALT-S1	11535011	c27oct17a_2-6	10/28/17	0934
13 VC-IRB-08-ALT-S2	11535012	c27oct17a_2-7	10/28/17	1041
14 VC-IRB-08-ALT-S3	11535013	c27oct17a_2-8	10/28/17	1148
15 VC-IRB-09-ALT	11535014	c27oct17a_2-9	10/28/17	1254
16 VC-IRB-10	11535015	c27oct17a_2-10	10/28/17	1401
17 VC-IRB-10 MS	11535016	c27oct17a_2-11	10/28/17	1507
18 VC-IRB-10 MSD	11535017	c27oct17a_3-3	10/28/17	1840
19 VC-IRB-12-S1	11535018	c27oct17a_3-4	10/28/17	1946
20 VC-IRB-12-S2	11535019	c27oct17a_3-5	10/28/17	2053
21 VC-IRB-25	11535020	c27oct17a_3-6	10/28/17	2200
22 VC-IRB-05-S2	11535007	c31oct17a-7	10/31/17	1636

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

**SDG Number:** L1736278  
**Lab Sample ID:** 11535016  
**Client Sample:** MS for 11535015 (VC-IRB-10)  
**Client ID:** VC-IRB-10 MS  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 15:07  
**Data File:** c27oct17a\_2-11  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 17:05  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 42.8  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		59.1	pg/g	2.33
2051-62-9	3-MoCB		67.6	pg/g	2.33
13029-08-8	4-DiCB		62.0	pg/g	2.33
2050-68-2	15-DiCB		83.7	pg/g	2.33
38444-73-4	19-TrCB		58.7	pg/g	2.33
38444-90-5	37-TrCB		68.3	pg/g	2.33
15968-05-5	54-TeCB		109	pg/g	2.33
32598-13-3	77-TeCB		118	pg/g	2.33
70362-50-4	81-TeCB		126	pg/g	2.33
56558-16-8	104-PeCB		114	pg/g	2.33
32598-14-4	105-PeCB		147	pg/g	2.33
74472-37-0	114-PeCB		135	pg/g	2.33
31508-00-6	118-PeCB		138	pg/g	2.33
65510-44-3	123-PeCB		119	pg/g	2.33
57465-28-8	126-PeCB		141	pg/g	2.33
33979-03-2	155-HxCB		123	pg/g	2.33
38380-08-4	156-HxCB	C	280	pg/g	4.67
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		141	pg/g	2.33
32774-16-6	169-HxCB		134	pg/g	2.33
74487-85-7	188-HpCB		114	pg/g	2.33
39635-31-9	189-HpCB		132	pg/g	2.33
2136-99-4	202-OcCB		178	pg/g	2.33
74472-53-0	205-OcCB		174	pg/g	2.33
40186-72-9	206-NoCB		177	pg/g	2.33
52663-77-1	208-NoCB		191	pg/g	2.33
2051-24-3	209-DeCB		191	pg/g	2.33

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		91.5	233	pg/g	39.2	(15%-150%)
13C-3-MoCB		101	233	pg/g	43.3	(15%-150%)
13C-4-DiCB		101	233	pg/g	43.2	(25%-150%)
13C-15-DiCB		157	233	pg/g	67.1	(25%-150%)
13C-19-TrCB		141	233	pg/g	60.4	(25%-150%)
13C-37-TrCB		128	233	pg/g	54.8	(25%-150%)
13C-54-TeCB		136	233	pg/g	58.4	(25%-150%)
13C-77-TeCB		136	233	pg/g	58.3	(25%-150%)
13C-81-TeCB		137	233	pg/g	58.9	(25%-150%)
13C-104-PeCB		178	233	pg/g	76.3	(25%-150%)
13C-105-PeCB		128	233	pg/g	54.9	(25%-150%)
13C-114-PeCB		131	233	pg/g	56.2	(25%-150%)
13C-118-PeCB		136	233	pg/g	58.3	(25%-150%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535016	<b>Date Collected:</b> 10/07/2017 17:05	<b>Matrix:</b> SOIL
<b>Client Sample:</b> MS for 11535015 (VC-IRB-10)	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 42.8
<b>Client ID:</b> VC-IRB-10 MS		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 15:07	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_2-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15 g	

CAS No.	Parmname	Qual	Result	Units	PQL		
<b>Surrogate/Tracer recovery</b>		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>	<b>Acceptable Limits</b>
13C-123-PeCB			139	233	pg/g	59.6	(25%-150%)
13C-126-PeCB			123	233	pg/g	52.6	(25%-150%)
13C-155-HxCB			174	233	pg/g	74.6	(25%-150%)
13C-156-HxCB		C	256	467	pg/g	54.9	(25%-150%)
13C-157-HxCB		C156L					
13C-167-HxCB			134	233	pg/g	57.5	(25%-150%)
13C-169-HxCB			117	233	pg/g	50.2	(25%-150%)
13C-188-HpCB			211	233	pg/g	90.5	(25%-150%)
13C-189-HpCB			135	233	pg/g	58.0	(25%-150%)
13C-202-OcCB			198	233	pg/g	85.1	(25%-150%)
13C-205-OcCB			167	233	pg/g	71.5	(25%-150%)
13C-206-NoCB			195	233	pg/g	83.6	(25%-150%)
13C-208-NoCB			196	233	pg/g	84.1	(25%-150%)
13C-209-DeCB			221	233	pg/g	94.9	(25%-150%)
13C-111-PeCB			182	233	pg/g	78.1	(30%-135%)
13C-28-TrCB			160	233	pg/g	68.7	(30%-135%)
13C-178-HpCB			234	233	pg/g	100	(30%-135%)

**Comments:**  
**C Congener has coeluters. When Cxxx, refer to congener number xxx for data**

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

**SDG Number:** L1736278  
**Lab Sample ID:** 11535017  
**Client Sample:** MSD for 11535015 (VC-IRB-10)  
**Client ID:** VC-IRB-10 MSD  
**Batch ID:** 36009  
**Run Date:** 10/28/2017 18:40  
**Data File:** c27oct17a\_3-3  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/07/2017 17:05  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 42.8  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		60.2	pg/g	2.33
2051-62-9	3-MoCB		66.1	pg/g	2.33
13029-08-8	4-DiCB		64.1	pg/g	2.33
2050-68-2	15-DiCB		81.1	pg/g	2.33
38444-73-4	19-TrCB		59.9	pg/g	2.33
38444-90-5	37-TrCB		66.3	pg/g	2.33
15968-05-5	54-TeCB		112	pg/g	2.33
32598-13-3	77-TeCB		119	pg/g	2.33
70362-50-4	81-TeCB		128	pg/g	2.33
56558-16-8	104-PeCB		117	pg/g	2.33
32598-14-4	105-PeCB		144	pg/g	2.33
74472-37-0	114-PeCB		136	pg/g	2.33
31508-00-6	118-PeCB		141	pg/g	2.33
65510-44-3	123-PeCB		120	pg/g	2.33
57465-28-8	126-PeCB		142	pg/g	2.33
33979-03-2	155-HxCB		127	pg/g	2.33
38380-08-4	156-HxCB	C	282	pg/g	4.67
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		142	pg/g	2.33
32774-16-6	169-HxCB		134	pg/g	2.33
74487-85-7	188-HpCB		117	pg/g	2.33
39635-31-9	189-HpCB		133	pg/g	2.33
2136-99-4	202-OcCB		181	pg/g	2.33
74472-53-0	205-OcCB		176	pg/g	2.33
40186-72-9	206-NoCB		172	pg/g	2.33
52663-77-1	208-NoCB		191	pg/g	2.33
2051-24-3	209-DeCB		189	pg/g	2.33

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		89.8	233	pg/g	38.5	(15%-150%)
13C-3-MoCB		102	233	pg/g	43.6	(15%-150%)
13C-4-DiCB		102	233	pg/g	43.6	(25%-150%)
13C-15-DiCB		165	233	pg/g	70.8	(25%-150%)
13C-19-TrCB		143	233	pg/g	61.4	(25%-150%)
13C-37-TrCB		137	233	pg/g	58.7	(25%-150%)
13C-54-TeCB		130	233	pg/g	55.7	(25%-150%)
13C-77-TeCB		147	233	pg/g	62.9	(25%-150%)
13C-81-TeCB		149	233	pg/g	63.9	(25%-150%)
13C-104-PeCB		174	233	pg/g	74.5	(25%-150%)
13C-105-PeCB		131	233	pg/g	56.2	(25%-150%)
13C-114-PeCB		135	233	pg/g	57.7	(25%-150%)
13C-118-PeCB		137	233	pg/g	58.6	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11535017	<b>Date Collected:</b> 10/07/2017 17:05	<b>Matrix:</b> SOIL
<b>Client Sample:</b> MSD for 11535015 (VC-IRB-10)	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 42.8
<b>Client ID:</b> VC-IRB-10 MSD		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 18:40	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 15 g	

CAS No.	Parmname	Qual	Result	Units	PQL	
<b>Surrogate/Tracer recovery</b>						
Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		141	233	pg/g	60.5	(25%-150%)
13C-126-PeCB		123	233	pg/g	52.8	(25%-150%)
13C-155-HxCB		173	233	pg/g	74.2	(25%-150%)
13C-156-HxCB	C	249	467	pg/g	53.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		131	233	pg/g	56.3	(25%-150%)
13C-169-HxCB		109	233	pg/g	46.9	(25%-150%)
13C-188-HpCB		219	233	pg/g	94.0	(25%-150%)
13C-189-HpCB		133	233	pg/g	57.2	(25%-150%)
13C-202-OcCB		205	233	pg/g	87.7	(25%-150%)
13C-205-OcCB		160	233	pg/g	68.5	(25%-150%)
13C-206-NoCB		190	233	pg/g	81.5	(25%-150%)
13C-208-NoCB		199	233	pg/g	85.2	(25%-150%)
13C-209-DeCB		216	233	pg/g	92.4	(25%-150%)
13C-111-PeCB		173	233	pg/g	74.0	(30%-135%)
13C-28-TrCB		141	233	pg/g	60.4	(30%-135%)
13C-178-HpCB		219	233	pg/g	94.0	(30%-135%)

**Comments:**

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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SDG Number: L1736278  
Lab Sample ID: 12019858  
Client Sample: QC for batch 36007  
Client ID: MB for batch 36007  
Batch ID: 36009  
Run Date: 10/27/2017 18:55  
Data File: c27oct17a-4  
Prep Batch: 36007  
Prep Date: 25-OCT-17

Client: ALPH001  
  
Method: EPA Method 1668A  
Analyst: MLS  
  
Prep Method: SW846 3540C  
Prep Aliquot: 10 g

Project: ALPH00217  
Matrix: SOIL  
  
Prep Basis: As Received  
  
Instrument: HRP791  
Dilution: 1  
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2	pg/g	2.00
2051-61-8	2-MoCB	U	2	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB	U	2	pg/g	2.00
16605-91-7	5-DiCB	U	2	pg/g	2.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	2	pg/g	2.00
34883-43-7	8-DiCB	U	2	pg/g	2.00
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	2	pg/g	2.00
2050-67-1	11-DiCB	U	20	pg/g	20.0
2974-92-7	12-DiCB	CU	4	pg/g	4.00
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2	pg/g	2.00
2050-68-2	15-DiCB	U	2	pg/g	2.00
38444-78-9	16-TrCB	U	2	pg/g	2.00
37680-66-3	17-TrCB	U	2	pg/g	2.00
37680-65-2	18-TrCB	CU	4	pg/g	4.00
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	4	pg/g	4.00
55702-46-0	21-TrCB	CU	4	pg/g	4.00
38444-85-8	22-TrCB	U	2	pg/g	2.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	4	pg/g	4.00
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2	pg/g	2.00
38444-77-8	32-TrCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	2	pg/g	2.00
38444-87-0	36-TrCB	U	2	pg/g	2.00
38444-90-5	37-TrCB	U	2	pg/g	2.00
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	2	pg/g	2.00
38444-93-8	40-TeCB	CU	4	pg/g	4.00
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	2	pg/g	2.00
41464-39-5	44-TeCB	CU	6	pg/g	6.00
70362-45-7	45-TeCB	CU	4	pg/g	4.00
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	4	pg/g	4.00
62796-65-0	50-TeCB	CU	4	pg/g	4.00
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	2	pg/g	2.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	6	pg/g	6.00
33025-41-1	60-TeCB	U	2	pg/g	2.00
33284-53-6	61-TeCB	CU	8	pg/g	8.00
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2	pg/g	2.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 3 of 8

**SDG Number:** L1736278  
**Lab Sample ID:** 12019858  
**Client Sample:** QC for batch 36007  
**Client ID:** MB for batch 36007  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 18:55  
**Data File:** c27oct17a-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 10 g

**Project:** ALPH00217  
**Matrix:** SOIL  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2	pg/g	2.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2	pg/g	2.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	2	pg/g	2.00
33284-52-5	80-TeCB	U	2	pg/g	2.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	2	pg/g	2.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	6	pg/g	6.00
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4	pg/g	4.00
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	6	pg/g	6.00
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	4	pg/g	4.00
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	2	pg/g	2.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736278  
**Lab Sample ID:** 12019858  
**Client Sample:** QC for batch 36007  
**Client ID:** MB for batch 36007  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 18:55  
**Data File:** c27oct17a-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 10 g

**Project:** ALPH00217  
**Matrix:** SOIL  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4	pg/g	4.00
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2	pg/g	2.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	2	pg/g	2.00
70362-41-3	108-PeCB	CU	4	pg/g	4.00
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4	pg/g	4.00
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2	pg/g	2.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	4	pg/g	4.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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SDG Number: L1736278  
Lab Sample ID: 12019858  
Client Sample: QC for batch 36007  
Client ID: MB for batch 36007  
Batch ID: 36009  
Run Date: 10/27/2017 18:55  
Data File: c27oct17a-4  
Prep Batch: 36007  
Prep Date: 25-OCT-17

Client: ALPH001  
  
Method: EPA Method 1668A  
Analyst: MLS  
  
Prep Method: SW846 3540C  
Prep Aliquot: 10 g

Project: ALPH00217  
Matrix: SOIL  
  
Prep Basis: As Received  
  
Instrument: HRP791  
Dilution: 1  
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6	pg/g	6.00
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	4	pg/g	4.00
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4	pg/g	4.00
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2	pg/g	2.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	4	pg/g	4.00
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	4	pg/g	4.00
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	4	pg/g	4.00
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 6 of 8

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	4	pg/g	4.00
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	4	pg/g	4.00
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	4	pg/g	4.00
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	4	pg/g	4.00
68194-17-2	198-OcCB	CU	4	pg/g	4.00
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners	U	2	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		83.1	200	pg/g	41.5	(15%-150%)
13C-3-MoCB		94.3	200	pg/g	47.2	(15%-150%)
13C-4-DiCB		105	200	pg/g	52.3	(25%-150%)
13C-15-DiCB		159	200	pg/g	79.6	(25%-150%)
13C-19-TrCB		139	200	pg/g	69.3	(25%-150%)
13C-37-TrCB		146	200	pg/g	72.8	(25%-150%)
13C-54-TeCB		138	200	pg/g	69.0	(25%-150%)
13C-77-TeCB		157	200	pg/g	78.5	(25%-150%)
13C-81-TeCB		158	200	pg/g	79.0	(25%-150%)
13C-104-PeCB		179	200	pg/g	89.7	(25%-150%)
13C-105-PeCB		144	200	pg/g	72.2	(25%-150%)
13C-114-PeCB		146	200	pg/g	73.0	(25%-150%)
13C-118-PeCB		150	200	pg/g	75.0	(25%-150%)
13C-123-PeCB		156	200	pg/g	77.8	(25%-150%)
13C-126-PeCB		148	200	pg/g	73.9	(25%-150%)
13C-155-HxCB		163	200	pg/g	81.7	(25%-150%)
13C-156-HxCB	C	278	400	pg/g	69.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		145	200	pg/g	72.3	(25%-150%)
13C-169-HxCB		138	200	pg/g	69.0	(25%-150%)
13C-188-HpCB		177	200	pg/g	88.4	(25%-150%)
13C-189-HpCB		132	200	pg/g	66.2	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			173	200	pg/g	86.4 (25%-150%)
13C-205-OcCB			171	200	pg/g	85.4 (25%-150%)
13C-206-NoCB			196	200	pg/g	98.1 (25%-150%)
13C-208-NoCB			175	200	pg/g	87.7 (25%-150%)
13C-209-DeCB			217	200	pg/g	109 (25%-150%)
13C-111-PeCB			158	200	pg/g	79.2 (30%-135%)
13C-28-TrCB			132	200	pg/g	65.9 (30%-135%)
13C-178-HpCB			195	200	pg/g	97.6 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019859		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> LCS for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 16:42	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		49.3	pg/g	2.00
2051-62-9	3-MoCB		52.1	pg/g	2.00
13029-08-8	4-DiCB		48.2	pg/g	2.00
2050-68-2	15-DiCB		59.7	pg/g	2.00
38444-73-4	19-TrCB		48.5	pg/g	2.00
38444-90-5	37-TrCB		51.4	pg/g	2.00
15968-05-5	54-TeCB		92.4	pg/g	2.00
32598-13-3	77-TeCB		97.0	pg/g	2.00
70362-50-4	81-TeCB		106	pg/g	2.00
56558-16-8	104-PeCB		97.2	pg/g	2.00
32598-14-4	105-PeCB		119	pg/g	2.00
74472-37-0	114-PeCB		113	pg/g	2.00
31508-00-6	118-PeCB		104	pg/g	2.00
65510-44-3	123-PeCB		98.6	pg/g	2.00
57465-28-8	126-PeCB		117	pg/g	2.00
33979-03-2	155-HxCB		100	pg/g	2.00
38380-08-4	156-HxCB	C	232	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		117	pg/g	2.00
32774-16-6	169-HxCB		111	pg/g	2.00
74487-85-7	188-HpCB		95.8	pg/g	2.00
39635-31-9	189-HpCB		113	pg/g	2.00
2136-99-4	202-OcCB		147	pg/g	2.00
74472-53-0	205-OcCB		146	pg/g	2.00
40186-72-9	206-NoCB		142	pg/g	2.00
52663-77-1	208-NoCB		154	pg/g	2.00
2051-24-3	209-DeCB		151	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		82.6	200	pg/g	41.3	(15%-140%)
13C-3-MoCB		98.8	200	pg/g	49.4	(15%-140%)
13C-4-DiCB		106	200	pg/g	53.0	(30%-140%)
13C-15-DiCB		166	200	pg/g	82.9	(30%-140%)
13C-19-TrCB		143	200	pg/g	71.3	(30%-140%)
13C-37-TrCB		153	200	pg/g	76.7	(30%-140%)
13C-54-TeCB		141	200	pg/g	70.6	(30%-140%)
13C-77-TeCB		169	200	pg/g	84.6	(30%-140%)
13C-81-TeCB		171	200	pg/g	85.4	(30%-140%)
13C-104-PeCB		180	200	pg/g	89.9	(30%-140%)
13C-105-PeCB		149	200	pg/g	74.3	(30%-140%)
13C-114-PeCB		153	200	pg/g	76.6	(30%-140%)
13C-118-PeCB		157	200	pg/g	78.3	(30%-140%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019859		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> LCS for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 16:42	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-123-PeCB			161	200	pg/g	80.5 (30%-140%)
13C-126-PeCB			157	200	pg/g	78.5 (30%-140%)
13C-155-HxCB			169	200	pg/g	84.3 (30%-140%)
13C-156-HxCB		C	287	400	pg/g	71.8 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			149	200	pg/g	74.5 (30%-140%)
13C-169-HxCB			143	200	pg/g	71.5 (30%-140%)
13C-188-HpCB			184	200	pg/g	92.0 (30%-140%)
13C-189-HpCB			139	200	pg/g	69.5 (30%-140%)
13C-202-OcCB			180	200	pg/g	89.9 (30%-140%)
13C-205-OcCB			178	200	pg/g	88.8 (30%-140%)
13C-206-NoCB			205	200	pg/g	102 (30%-140%)
13C-208-NoCB			183	200	pg/g	91.7 (30%-140%)
13C-209-DeCB			227	200	pg/g	114 (30%-140%)
13C-111-PeCB			167	200	pg/g	83.6 (40%-125%)
13C-28-TrCB			136	200	pg/g	67.8 (40%-125%)
13C-178-HpCB			205	200	pg/g	103 (40%-125%)

**Comments:**  
**C Congener has coeluters. When Cxxx, refer to congener number xxx for data**

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019860		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> LCSD for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 17:49	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		50.1	pg/g	2.00
2051-62-9	3-MoCB		53.3	pg/g	2.00
13029-08-8	4-DiCB		49.2	pg/g	2.00
2050-68-2	15-DiCB		57.5	pg/g	2.00
38444-73-4	19-TrCB		50.9	pg/g	2.00
38444-90-5	37-TrCB		51.3	pg/g	2.00
15968-05-5	54-TeCB		94.3	pg/g	2.00
32598-13-3	77-TeCB		96.5	pg/g	2.00
70362-50-4	81-TeCB		107	pg/g	2.00
56558-16-8	104-PeCB		97.1	pg/g	2.00
32598-14-4	105-PeCB		118	pg/g	2.00
74472-37-0	114-PeCB		112	pg/g	2.00
31508-00-6	118-PeCB		106	pg/g	2.00
65510-44-3	123-PeCB		98.0	pg/g	2.00
57465-28-8	126-PeCB		115	pg/g	2.00
33979-03-2	155-HxCB		105	pg/g	2.00
38380-08-4	156-HxCB	C	233	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		117	pg/g	2.00
32774-16-6	169-HxCB		113	pg/g	2.00
74487-85-7	188-HpCB		95.8	pg/g	2.00
39635-31-9	189-HpCB		111	pg/g	2.00
2136-99-4	202-OcCB		148	pg/g	2.00
74472-53-0	205-OcCB		146	pg/g	2.00
40186-72-9	206-NoCB		141	pg/g	2.00
52663-77-1	208-NoCB		156	pg/g	2.00
2051-24-3	209-DeCB		149	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		84.7	200	pg/g	42.4	(15%-140%)
13C-3-MoCB		98.5	200	pg/g	49.2	(15%-140%)
13C-4-DiCB		108	200	pg/g	53.8	(30%-140%)
13C-15-DiCB		167	200	pg/g	83.5	(30%-140%)
13C-19-TrCB		142	200	pg/g	70.9	(30%-140%)
13C-37-TrCB		164	200	pg/g	81.9	(30%-140%)
13C-54-TeCB		144	200	pg/g	71.9	(30%-140%)
13C-77-TeCB		188	200	pg/g	93.8	(30%-140%)
13C-81-TeCB		185	200	pg/g	92.3	(30%-140%)
13C-104-PeCB		184	200	pg/g	91.8	(30%-140%)
13C-105-PeCB		162	200	pg/g	80.9	(30%-140%)
13C-114-PeCB		165	200	pg/g	82.3	(30%-140%)
13C-118-PeCB		167	200	pg/g	83.5	(30%-140%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736278	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019860		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> LCSD for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 17:49	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-123-PeCB			172	200	pg/g	86.2 (30%-140%)
13C-126-PeCB			172	200	pg/g	85.9 (30%-140%)
13C-155-HxCB			166	200	pg/g	83.1 (30%-140%)
13C-156-HxCB		C	302	400	pg/g	75.6 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			156	200	pg/g	78.1 (30%-140%)
13C-169-HxCB			155	200	pg/g	77.4 (30%-140%)
13C-188-HpCB			184	200	pg/g	91.8 (30%-140%)
13C-189-HpCB			147	200	pg/g	73.3 (30%-140%)
13C-202-OcCB			184	200	pg/g	91.9 (30%-140%)
13C-205-OcCB			183	200	pg/g	91.4 (30%-140%)
13C-206-NoCB			208	200	pg/g	104 (30%-140%)
13C-208-NoCB			184	200	pg/g	92.0 (30%-140%)
13C-209-DeCB			231	200	pg/g	115 (30%-140%)
13C-111-PeCB			174	200	pg/g	87.1 (40%-125%)
13C-28-TrCB			138	200	pg/g	68.8 (40%-125%)
13C-178-HpCB			204	200	pg/g	102 (40%-125%)

**Comments:**  
**C Congener has coeluters. When Cxxx, refer to congener number xxx for data**



## ANALYTICAL REPORT

Lab Number:	L1736485
Client:	ESS Group, Inc. 100 Fifth Avenue 5th Floor Waltham, MA 02451
ATTN:	Michael Phillips
Phone:	(781) 419-7718
Project Name:	US WIND
Project Number:	U167-022
Report Date:	11/15/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1736485-01	VC-IRB-14-ALT-S1	SEDIMENT	DELAWARE	10/09/17 17:00	10/10/17
L1736485-02	VC-IRB-14-ALT-S2	SEDIMENT	DELAWARE	10/09/17 17:10	10/10/17
L1736485-03	VC-IRB-15-ALT-S1	SEDIMENT	DELAWARE	10/09/17 15:45	10/10/17
L1736485-04	VC-IRB-15-ALT-S2	SEDIMENT	DELAWARE	10/09/17 15:55	10/10/17

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

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**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

### Case Narrative (continued)

#### Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analysis of PCB Congeners and Dioxin/Furan was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt

L1736485 was frozen upon receipt in order to arrest the holding time.

#### PAHs by SIM

The WG1060110-1 Method Blank, associated with L1736485-01 through -04, has concentrations above the reporting limits for Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, and Benzo(g,h,i)perylene. Since the sample(s) were non-detect to the RL for these target analytes, no further actions were taken. The results of the original analysis are reported.

#### Phosphorus, Total

WG1053383-1: A Matrix Spike and Laboratory Duplicate were prepared with the sample batch, however, the native sample was not available for reporting; therefore, the Matrix Spike and Laboratory Duplicate results could not be reported.

#### Moisture

The WG1060349-1 Laboratory Duplicate RPD (49%), performed on L1736485-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

#### Grain Size Analysis

The WG1059017-1 Laboratory Duplicate RPD for % Medium sand (67%), % Silt fine (68%), % Clay fine (74%) and Total fines (69%), performed on L1736485-01, is outside the acceptance criteria. The elevated RPD has

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

### Case Narrative (continued)

been attributed to the non-homogeneous nature of the native sample.

#### Atterberg Limits

The WG1063330-1 Laboratory Duplicate RPD for Plasticity index (100%), performed on L1736485-03, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Elizabeth Porta

Title: Technical Director/Representative

Date: 11/15/17

# ORGANICS

# SEMIVOLATILES

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-01  
 Client ID: VC-IRB-14-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/09/17 17:00  
 Date Received: 10/10/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/07/17 21:45  
 Analyst: GP  
 Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	1.91	J	ug/kg	9.00	0.805	1
Acenaphthylene	ND		ug/kg	9.00	0.603	1
Acenaphthene	ND		ug/kg	9.00	1.01	1
Fluorene	ND		ug/kg	9.00	0.601	1
Phenanthrene	ND		ug/kg	9.00	1.06	1
Anthracene	ND		ug/kg	9.00	1.12	1
Fluoranthene	ND		ug/kg	9.00	1.65	1
Pyrene	ND		ug/kg	9.00	0.918	1
Benz(a)anthracene	ND		ug/kg	9.00	2.40	1
Chrysene	ND		ug/kg	9.00	0.791	1
Benzo(b)fluoranthene	ND		ug/kg	9.00	0.936	1
Benzo(k)fluoranthene	ND		ug/kg	9.00	0.927	1
Benzo(a)pyrene	ND		ug/kg	9.00	1.05	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	9.00	2.56	1
Dibenz(a,h)anthracene	2.20	JB	ug/kg	9.00	0.927	1
Benzo(g,h,i)perylene	3.40	JB	ug/kg	9.00	0.741	1
2-Methylnaphthalene	1.18	J	ug/kg	9.00	1.12	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	60		30-130
Pyrene-d10	78		30-130
Benzo(b)fluoranthene-d12	85		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-02  
 Client ID: VC-IRB-14-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/09/17 17:10  
 Date Received: 10/10/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/07/17 22:16  
 Analyst: GP  
 Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	1.13	J	ug/kg	5.86	0.524	1
Acenaphthylene	ND		ug/kg	5.86	0.392	1
Acenaphthene	ND		ug/kg	5.86	0.656	1
Fluorene	ND		ug/kg	5.86	0.391	1
Phenanthrene	0.723	J	ug/kg	5.86	0.691	1
Anthracene	ND		ug/kg	5.86	0.726	1
Fluoranthene	ND		ug/kg	5.86	1.07	1
Pyrene	ND		ug/kg	5.86	0.597	1
Benzo(a)anthracene	ND		ug/kg	5.86	1.56	1
Chrysene	ND		ug/kg	5.86	0.515	1
Benzo(b)fluoranthene	ND		ug/kg	5.86	0.609	1
Benzo(k)fluoranthene	ND		ug/kg	5.86	0.603	1
Benzo(a)pyrene	ND		ug/kg	5.86	0.685	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	5.86	1.67	1
Dibenz(a,h)anthracene	ND		ug/kg	5.86	0.603	1
Benzo(g,h,i)perylene	ND		ug/kg	5.86	0.483	1
2-Methylnaphthalene	ND		ug/kg	5.86	0.726	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	50		30-130
Pyrene-d10	74		30-130
Benzo(b)fluoranthene-d12	79		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-03  
 Client ID: VC-IRB-15-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/09/17 15:45  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/07/17 22:46  
 Analyst: GP  
 Percent Solids: 83%

Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	1.71	J	ug/kg	8.62	0.771	1
Acenaphthylene	ND		ug/kg	8.62	0.577	1
Acenaphthene	ND		ug/kg	8.62	0.965	1
Fluorene	ND		ug/kg	8.62	0.576	1
Phenanthrene	ND		ug/kg	8.62	1.02	1
Anthracene	ND		ug/kg	8.62	1.07	1
Fluoranthene	ND		ug/kg	8.62	1.58	1
Pyrene	ND		ug/kg	8.62	0.879	1
Benzo(a)anthracene	ND		ug/kg	8.62	2.30	1
Chrysene	ND		ug/kg	8.62	0.757	1
Benzo(b)fluoranthene	ND		ug/kg	8.62	0.896	1
Benzo(k)fluoranthene	ND		ug/kg	8.62	0.888	1
Benzo(a)pyrene	ND		ug/kg	8.62	1.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.62	2.46	1
Dibenz(a,h)anthracene	ND		ug/kg	8.62	0.888	1
Benzo(g,h,i)perylene	ND		ug/kg	8.62	0.710	1
2-Methylnaphthalene	ND		ug/kg	8.62	1.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	63		30-130
Pyrene-d10	83		30-130
Benzo(b)fluoranthene-d12	88		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736485-04  
**Client ID:** VC-IRB-15-ALT-S2  
**Sample Location:** DELAWARE

**Date Collected:** 10/09/17 15:55  
**Date Received:** 10/10/17  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 18:15  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

**Matrix:** Sediment  
**Analytical Method:** 1,8270D-SIM  
**Analytical Date:** 11/07/17 23:16  
**Analyst:** GP  
**Percent Solids:** 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Naphthalene	1.21	J	ug/kg	5.68	0.509	1
Acenaphthylene	ND		ug/kg	5.68	0.381	1
Acenaphthene	ND		ug/kg	5.68	0.636	1
Fluorene	ND		ug/kg	5.68	0.380	1
Phenanthrene	0.718	J	ug/kg	5.68	0.671	1
Anthracene	ND		ug/kg	5.68	0.705	1
Fluoranthene	ND		ug/kg	5.68	1.04	1
Pyrene	0.913	J	ug/kg	5.68	0.580	1
Benz(a)anthracene	ND		ug/kg	5.68	1.52	1
Chrysene	ND		ug/kg	5.68	0.500	1
Benzo(b)fluoranthene	ND		ug/kg	5.68	0.591	1
Benzo(k)fluoranthene	ND		ug/kg	5.68	0.585	1
Benzo(a)pyrene	ND		ug/kg	5.68	0.665	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	5.68	1.62	1
Dibenz(a,h)anthracene	ND		ug/kg	5.68	0.585	1
Benzo(g,h,i)perylene	ND		ug/kg	5.68	0.468	1
2-Methylnaphthalene	ND		ug/kg	5.68	0.705	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	46		30-130
Pyrene-d10	76		30-130
Benzo(b)fluoranthene-d12	80		30-130



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8270D-SIM  
**Analytical Date:** 11/07/17 19:13  
**Analyst:** GP

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 18:15  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL
PAHs by GC/MS-SIM - Mansfield Lab for sample(s): 01-04 Batch: WG1060110-1					
Naphthalene	1.47	J	ug/kg	4.00	0.358
Acenaphthylene	ND		ug/kg	4.00	0.268
Acenaphthene	ND		ug/kg	4.00	0.448
Fluorene	ND		ug/kg	4.00	0.267
Phenanthrene	0.540	J	ug/kg	4.00	0.472
Anthracene	ND		ug/kg	4.00	0.496
Fluoranthene	ND		ug/kg	4.00	0.732
Pyrene	ND		ug/kg	4.00	0.408
Benz(a)anthracene	ND		ug/kg	4.00	1.07
Chrysene	ND		ug/kg	4.00	0.352
Benzo(b)fluoranthene	1.35	J	ug/kg	4.00	0.416
Benzo(k)fluoranthene	ND		ug/kg	4.00	0.412
Benzo(a)pyrene	0.497	J	ug/kg	4.00	0.468
Indeno(1,2,3-cd)pyrene	6.27		ug/kg	4.00	1.14
Dibenz(a,h)anthracene	4.96		ug/kg	4.00	0.412
Benzo(g,h,i)perylene	5.02		ug/kg	4.00	0.330
2-Methylnaphthalene	0.542	J	ug/kg	4.00	0.496

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	66		30-130
Pyrene-d10	81		30-130
Benzo(b)fluoranthene-d12	88		30-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736485

Report Date: 11/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060110-2 WG1060110-3								
Naphthalene	57		54		40-140	5		30
Acenaphthylene	68		64		40-140	6		30
Acenaphthene	52		50		40-140	4		30
Fluorene	70		67		40-140	4		30
Phenanthrene	73		72		40-140	1		30
Anthracene	77		77		40-140	0		30
Fluoranthene	77		78		40-140	1		30
Pyrene	71		70		40-140	1		30
Benz(a)anthracene	81		83		40-140	2		30
Chrysene	78		83		40-140	6		30
Benzo(b)fluoranthene	86		90		40-140	5		30
Benzo(k)fluoranthene	77		82		40-140	6		30
Benzo(a)pyrene	83		86		40-140	4		30
Indeno(1,2,3-cd)pyrene	92		79		40-140	15		30
Dibenz(a,h)anthracene	86		84		40-140	2		30
Benzo(g,h,i)perylene	87		79		40-140	10		30
2-Methylnaphthalene	65		62		40-140	5		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
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PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060110-2 WG1060110-3

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
2-Methylnaphthalene-d10	63		58		30-130
Pyrene-d10	79		77		30-130
Benzo(b)fluoranthene-d12	83		85		30-130

# PESTICIDES

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736485-01  
**Client ID:** VC-IRB-14-ALT-S1  
**Sample Location:** DELAWARE

**Date Collected:** 10/09/17 17:00  
**Date Received:** 10/10/17  
**Field Prep:** Not Specified

**Matrix:** Sediment  
**Analytical Method:** 1,8081B  
**Analytical Date:** 11/08/17 15:32  
**Analyst:** DP  
**Percent Solids:** 83%

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 18:15  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.409	0.409	1	A
Hexachlorobenzene	ND		ug/kg	0.819	0.819	1	A
beta-BHC	ND		ug/kg	0.409	0.409	1	A
gamma-BHC	ND		ug/kg	0.409	0.409	1	A
delta-BHC	ND		ug/kg	0.409	0.409	1	A
Heptachlor	ND		ug/kg	0.409	0.409	1	A
Aldrin	ND		ug/kg	0.409	0.409	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.819	0.819	1	B
Oxychlordane	ND		ug/kg	0.819	0.819	1	B
gamma-Chlordane	ND		ug/kg	0.409	0.409	1	A
2,4'-DDE	ND		ug/kg	0.409	0.409	1	A
Endosulfan I	ND		ug/kg	0.409	0.409	1	A
alpha-Chlordane	ND		ug/kg	0.409	0.409	1	A
trans-Nonachlor	ND		ug/kg	0.409	0.409	1	A
4,4'-DDE	ND		ug/kg	0.409	0.409	1	A
Dieldrin	ND		ug/kg	0.409	0.409	1	A
2,4'-DDD	ND		ug/kg	0.409	0.409	1	A
Endrin	ND		ug/kg	0.409	0.409	1	A
Endosulfan II	ND		ug/kg	0.409	0.409	1	A
4,4'-DDD	ND		ug/kg	0.409	0.409	1	A
2,4'-DDT	ND		ug/kg	0.409	0.409	1	A
cis-Nonachlor	ND		ug/kg	0.409	0.409	1	A
Endrin aldehyde	ND		ug/kg	1.23	1.23	1	A
Endosulfan sulfate	ND		ug/kg	0.409	0.409	1	A
4,4'-DDT	ND		ug/kg	0.409	0.409	1	A
Endrin ketone	ND		ug/kg	0.409	0.409	1	A
Methoxychlor	ND		ug/kg	4.09	4.09	1	A
Mirex	ND		ug/kg	0.409	0.409	1	A
Toxaphene	ND		ug/kg	20.6	20.6	1	A
Chlordane	ND		ug/kg	20.6	20.6	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-01  
 Client ID: VC-IRB-14-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/09/17 17:00  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	61		30-150	A
DCB - Surrogate	70		30-150	A
TMX - Surrogate	56		30-150	B
DCB - Surrogate	65		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-02  
 Client ID: VC-IRB-14-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/09/17 17:10  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/08/17 16:05  
 Analyst: DP  
 Percent Solids: 66%

Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
alpha-BHC	ND		ug/kg	0.286	0.286	1	A
Hexachlorobenzene	ND		ug/kg	0.572	0.572	1	A
beta-BHC	ND		ug/kg	0.286	0.286	1	A
gamma-BHC	ND		ug/kg	0.286	0.286	1	A
delta-BHC	ND		ug/kg	0.286	0.286	1	A
Heptachlor	ND		ug/kg	0.286	0.286	1	A
Aldrin	ND		ug/kg	0.286	0.286	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.572	0.572	1	B
Oxychlordane	ND		ug/kg	0.572	0.572	1	B
gamma-Chlordane	ND		ug/kg	0.286	0.286	1	A
2,4'-DDE	ND		ug/kg	0.286	0.286	1	A
Endosulfan I	ND		ug/kg	0.286	0.286	1	A
alpha-Chlordane	ND		ug/kg	0.286	0.286	1	A
trans-Nonachlor	ND		ug/kg	0.286	0.286	1	A
4,4'-DDE	ND		ug/kg	0.286	0.286	1	A
Dieldrin	ND		ug/kg	0.286	0.286	1	A
2,4'-DDD	ND		ug/kg	0.286	0.286	1	A
Endrin	ND		ug/kg	0.286	0.286	1	A
Endosulfan II	ND		ug/kg	0.286	0.286	1	A
4,4'-DDD	ND		ug/kg	0.286	0.286	1	A
2,4'-DDT	ND		ug/kg	0.286	0.286	1	A
cis-Nonachlor	ND		ug/kg	0.286	0.286	1	A
Endrin aldehyde	ND		ug/kg	0.859	0.859	1	A
Endosulfan sulfate	ND		ug/kg	0.286	0.286	1	A
4,4'-DDT	ND		ug/kg	0.286	0.286	1	A
Endrin ketone	ND		ug/kg	0.286	0.286	1	A
Methoxychlor	ND		ug/kg	2.86	2.86	1	A
Mirex	ND		ug/kg	0.286	0.286	1	A
Toxaphene	ND		ug/kg	14.4	14.4	1	A
Chlordane	ND		ug/kg	14.4	14.4	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-02  
 Client ID: VC-IRB-14-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/09/17 17:10  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	61		30-150	A
DCB - Surrogate	76		30-150	A
TMX - Surrogate	54		30-150	B
DCB - Surrogate	70		30-150	B



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-03  
 Client ID: VC-IRB-15-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/09/17 15:45  
 Date Received: 10/10/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/08/17 16:37  
 Analyst: DP  
 Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.443	0.443	1	A
Hexachlorobenzene	ND		ug/kg	0.885	0.885	1	A
beta-BHC	ND		ug/kg	0.443	0.443	1	A
gamma-BHC	ND		ug/kg	0.443	0.443	1	A
delta-BHC	ND		ug/kg	0.443	0.443	1	A
Heptachlor	ND		ug/kg	0.443	0.443	1	A
Aldrin	ND		ug/kg	0.443	0.443	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.885	0.885	1	B
Oxychlordane	ND		ug/kg	0.885	0.885	1	B
gamma-Chlordane	ND		ug/kg	0.443	0.443	1	A
2,4'-DDE	ND		ug/kg	0.443	0.443	1	A
Endosulfan I	ND		ug/kg	0.443	0.443	1	A
alpha-Chlordane	ND		ug/kg	0.443	0.443	1	A
trans-Nonachlor	ND		ug/kg	0.443	0.443	1	A
4,4'-DDE	ND		ug/kg	0.443	0.443	1	A
Dieldrin	ND		ug/kg	0.443	0.443	1	A
2,4'-DDD	ND		ug/kg	0.443	0.443	1	A
Endrin	ND		ug/kg	0.443	0.443	1	A
Endosulfan II	ND		ug/kg	0.443	0.443	1	A
4,4'-DDD	ND		ug/kg	0.443	0.443	1	A
2,4'-DDT	ND		ug/kg	0.443	0.443	1	A
cis-Nonachlor	ND		ug/kg	0.443	0.443	1	A
Endrin aldehyde	ND		ug/kg	1.33	1.33	1	A
Endosulfan sulfate	ND		ug/kg	0.443	0.443	1	A
4,4'-DDT	ND		ug/kg	0.443	0.443	1	A
Endrin ketone	ND		ug/kg	0.443	0.443	1	A
Methoxychlor	ND		ug/kg	4.43	4.43	1	A
Mirex	ND		ug/kg	0.443	0.443	1	A
Toxaphene	ND		ug/kg	22.2	22.2	1	A
Chlordane	ND		ug/kg	22.2	22.2	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-03  
 Client ID: VC-IRB-15-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/09/17 15:45  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	62		30-150	A
DCB - Surrogate	69		30-150	A
TMX - Surrogate	55		30-150	B
DCB - Surrogate	65		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-04  
 Client ID: VC-IRB-15-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/09/17 15:55  
 Date Received: 10/10/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/08/17 17:10  
 Analyst: DP  
 Percent Solids: 66%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.278	0.278	1	A
Hexachlorobenzene	ND		ug/kg	0.555	0.555	1	A
beta-BHC	ND		ug/kg	0.278	0.278	1	A
gamma-BHC	ND		ug/kg	0.278	0.278	1	A
delta-BHC	ND		ug/kg	0.278	0.278	1	A
Heptachlor	ND		ug/kg	0.278	0.278	1	A
Aldrin	ND		ug/kg	0.278	0.278	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.555	0.555	1	B
Oxychlordane	ND		ug/kg	0.555	0.555	1	B
gamma-Chlordane	ND		ug/kg	0.278	0.278	1	A
2,4'-DDE	ND		ug/kg	0.278	0.278	1	A
Endosulfan I	ND		ug/kg	0.278	0.278	1	A
alpha-Chlordane	ND		ug/kg	0.278	0.278	1	A
trans-Nonachlor	ND		ug/kg	0.278	0.278	1	A
4,4'-DDE	ND		ug/kg	0.278	0.278	1	A
Dieldrin	ND		ug/kg	0.278	0.278	1	A
2,4'-DDD	ND		ug/kg	0.278	0.278	1	A
Endrin	ND		ug/kg	0.278	0.278	1	A
Endosulfan II	ND		ug/kg	0.278	0.278	1	A
4,4'-DDD	ND		ug/kg	0.278	0.278	1	A
2,4'-DDT	ND		ug/kg	0.278	0.278	1	A
cis-Nonachlor	ND		ug/kg	0.278	0.278	1	A
Endrin aldehyde	ND		ug/kg	0.833	0.833	1	A
Endosulfan sulfate	ND		ug/kg	0.278	0.278	1	A
4,4'-DDT	ND		ug/kg	0.278	0.278	1	A
Endrin ketone	ND		ug/kg	0.278	0.278	1	A
Methoxychlor	ND		ug/kg	2.78	2.78	1	A
Mirex	ND		ug/kg	0.278	0.278	1	A
Toxaphene	ND		ug/kg	13.9	13.9	1	A
Chlordane	ND		ug/kg	13.9	13.9	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-04  
 Client ID: VC-IRB-15-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/09/17 15:55  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	63		30-150	A
DCB - Surrogate	81		30-150	A
TMX - Surrogate	56		30-150	B
DCB - Surrogate	73		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8081B  
**Analytical Date:** 11/08/17 13:55  
**Analyst:** DP

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 18:15  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-04 Batch: WG1060111-1						
alpha-BHC	ND		ug/kg	0.200	0.200	A
Hexachlorobenzene	ND		ug/kg	0.400	0.400	A
beta-BHC	ND		ug/kg	0.200	0.200	A
gamma-BHC	ND		ug/kg	0.200	0.200	A
delta-BHC	ND		ug/kg	0.200	0.200	A
Heptachlor	ND		ug/kg	0.200	0.200	A
Aldrin	ND		ug/kg	0.200	0.200	A
gamma-Chlordane	ND		ug/kg	0.200	0.200	A
2,4'-DDE	ND		ug/kg	0.200	0.200	A
Endosulfan I	ND		ug/kg	0.200	0.200	A
alpha-Chlordane	ND		ug/kg	0.200	0.200	A
trans-Nonachlor	ND		ug/kg	0.200	0.200	A
4,4'-DDE	ND		ug/kg	0.200	0.200	A
Dieldrin	ND		ug/kg	0.200	0.200	A
2,4'-DDD	ND		ug/kg	0.200	0.200	A
Endrin	ND		ug/kg	0.200	0.200	A
Endosulfan II	ND		ug/kg	0.200	0.200	A
4,4'-DDD	ND		ug/kg	0.200	0.200	A
2,4'-DDT	ND		ug/kg	0.200	0.200	A
cis-Nonachlor	ND		ug/kg	0.200	0.200	A
Endrin aldehyde	ND		ug/kg	0.600	0.600	A
Endosulfan sulfate	ND		ug/kg	0.200	0.200	A
4,4'-DDT	ND		ug/kg	0.200	0.200	A
Endrin ketone	ND		ug/kg	0.200	0.200	A
Methoxychlor	ND		ug/kg	2.00	2.00	A
Mirex	ND		ug/kg	0.200	0.200	A
Toxaphene	ND		ug/kg	10.0	10.0	A
Chlordane	ND		ug/kg	10.0	10.0	A
Heptachlor epoxide (B)	ND		ug/kg	0.400	0.400	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8081B  
**Analytical Date:** 11/08/17 13:55  
**Analyst:** DP

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 18:15  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-04 Batch: WG1060111-1						
Oxychlorane	ND		ug/kg	0.400	0.400	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	65		30-150	A
DCB - Surrogate	76		30-150	A
TMX - Surrogate	58		30-150	B
DCB - Surrogate	72		30-150	B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Lab Number: L1736485

Project Number: U167-022

Report Date: 11/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060111-2 WG1060111-3									
alpha-BHC	76		82		40-140	8		50	A
Hexachlorobenzene	68		73		40-140	7		50	A
beta-BHC	67		73		40-140	9		50	A
gamma-BHC	70		76		40-140	8		50	A
delta-BHC	80		88		40-140	10		50	A
Heptachlor	71		76		40-140	7		50	A
Aldrin	75		80		40-140	6		50	A
gamma-Chlordane	76		82		40-140	8		50	A
2,4'-DDE	73		78		40-140	7		50	A
Endosulfan I	73		77		40-140	5		50	A
alpha-Chlordane	73		78		40-140	7		50	A
trans-Nonachlor	74		80		40-140	8		50	A
4,4'-DDE	76		81		40-140	6		50	A
Dieldrin	79		82		40-140	4		50	A
2,4'-DDD	71		74		40-140	4		50	A
Endrin	71		75		40-140	5		50	A
Endosulfan II	71		75		40-140	5		50	A
4,4'-DDD	72		76		40-140	5		50	A
2,4'-DDT	124		132		40-140	6		50	A
cis-Nonachlor	72		76		40-140	5		50	A
Endrin aldehyde	66		70		40-140	6		50	A
Endosulfan sulfate	78		83		40-140	6		50	A
4,4'-DDT	82		88		40-140	7		50	A

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060111-2 WG1060111-3								
Endrin ketone	88		93		40-140	6	50	A
Methoxychlor	78		83		40-140	6	50	A
Mirex	66		70		40-140	6	50	A

Surrogate	LCS		LCSD		Acceptance Criteria	Column
	%Recovery	Qual	%Recovery	Qual		
TMX - Surrogate	62		66		30-150	A
DCB - Surrogate	73		77		30-150	A
TMX - Surrogate	54		59		30-150	B
DCB - Surrogate	68		72		30-150	B





## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736485

Report Date: 11/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060111-2 WG1060111-3									
Heptachlor epoxide (B)	63		68		40-140	8		50	B
Oxychlorane	64		69		40-140	8		50	B

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
TMX - Surrogate	62		66		30-150	A
DCB - Surrogate	73		77		30-150	A
TMX - Surrogate	54		59		30-150	B
DCB - Surrogate	68		72		30-150	B

## METALS

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-01  
 Client ID: VC-IRB-14-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 83%

Date Collected: 10/09/17 17:00  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	1780		mg/kg	23.0	3.41	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Antimony, Total	ND		mg/kg	0.369	0.031	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Arsenic, Total	1.19		mg/kg	0.115	0.015	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Barium, Total	5.48		mg/kg	0.691	0.049	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Beryllium, Total	0.064	J	mg/kg	0.069	0.020	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Cadmium, Total	0.011	J	mg/kg	0.046	0.006	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Calcium, Total	330		mg/kg	115	14.0	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Chromium, Total	4.25		mg/kg	0.461	0.108	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Cobalt, Total	1.10		mg/kg	0.115	0.012	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Copper, Total	0.941		mg/kg	0.461	0.045	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Iron, Total	2420		mg/kg	46.1	4.75	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Lead, Total	1.32		mg/kg	0.138	0.034	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Magnesium, Total	901		mg/kg	23.0	2.84	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Manganese, Total	21.2		mg/kg	0.461	0.102	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.016	0.002	5	10/16/17 14:23	10/21/17 17:25	EPA 7474	1,7474	BV
Nickel, Total	2.37		mg/kg	0.230	0.062	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Potassium, Total	343		mg/kg	23.0	3.66	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Selenium, Total	0.958		mg/kg	0.461	0.174	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.115	0.011	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Sodium, Total	2550		mg/kg	34.6	2.70	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Thallium, Total	0.025	J	mg/kg	0.046	0.012	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Vanadium, Total	4.12		mg/kg	0.230	0.087	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM
Zinc, Total	6.36		mg/kg	2.30	0.599	2	10/16/17 13:37	10/23/17 12:29	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-02  
 Client ID: VC-IRB-14-ALT-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 66%

Date Collected: 10/09/17 17:10  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	8130		mg/kg	28.6	4.23	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Antimony, Total	0.054	J	mg/kg	0.457	0.039	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Arsenic, Total	5.18		mg/kg	0.143	0.019	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Barium, Total	24.5		mg/kg	0.857	0.060	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Beryllium, Total	0.306		mg/kg	0.086	0.025	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Cadmium, Total	0.080		mg/kg	0.057	0.008	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Calcium, Total	5470		mg/kg	143	17.4	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Chromium, Total	20.2		mg/kg	0.571	0.134	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Cobalt, Total	4.68		mg/kg	0.143	0.015	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Copper, Total	5.20		mg/kg	0.571	0.055	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Iron, Total	14200		mg/kg	57.1	5.88	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Lead, Total	4.20		mg/kg	0.171	0.042	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Magnesium, Total	4840		mg/kg	28.6	3.52	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Manganese, Total	119		mg/kg	0.571	0.127	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.019	0.002	5	10/16/17 14:23	10/21/17 17:32	EPA 7474	1,7474	BV
Nickel, Total	11.2		mg/kg	0.286	0.076	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Potassium, Total	1860		mg/kg	28.6	4.54	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Selenium, Total	3.56		mg/kg	0.571	0.216	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Silver, Total	0.017	J	mg/kg	0.143	0.014	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Sodium, Total	8100		mg/kg	42.8	3.35	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Thallium, Total	0.106		mg/kg	0.057	0.015	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Vanadium, Total	20.4		mg/kg	0.286	0.108	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM
Zinc, Total	33.1		mg/kg	2.86	0.743	2	10/16/17 13:37	10/23/17 12:33	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-03  
 Client ID: VC-IRB-15-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 83%

Date Collected: 10/09/17 15:45  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	2190		mg/kg	23.8	3.53	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Antimony, Total	0.074	J	mg/kg	0.381	0.032	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Arsenic, Total	1.35		mg/kg	0.119	0.016	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Barium, Total	6.02		mg/kg	0.715	0.050	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Beryllium, Total	0.078		mg/kg	0.072	0.021	2	10/16/17 13:37	10/24/17 16:28	EPA 3050B	1,6020A	AM
Cadmium, Total	0.015	J	mg/kg	0.048	0.006	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Calcium, Total	346		mg/kg	119	14.5	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Chromium, Total	5.15		mg/kg	0.477	0.112	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Cobalt, Total	1.32		mg/kg	0.119	0.013	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Copper, Total	1.19		mg/kg	0.477	0.046	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Iron, Total	2910		mg/kg	47.7	4.91	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Lead, Total	1.28		mg/kg	0.143	0.035	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Magnesium, Total	1070		mg/kg	23.8	2.94	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Manganese, Total	26.3		mg/kg	0.477	0.106	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.018	0.002	5	10/16/17 14:23	10/21/17 17:34	EPA 7474	1,7474	BV
Nickel, Total	2.93		mg/kg	0.238	0.064	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Potassium, Total	414		mg/kg	23.8	3.78	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Selenium, Total	1.01		mg/kg	0.477	0.180	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.119	0.012	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Sodium, Total	2560		mg/kg	35.7	2.79	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Thallium, Total	0.026	J	mg/kg	0.048	0.012	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Vanadium, Total	4.88		mg/kg	0.238	0.090	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM
Zinc, Total	7.53		mg/kg	2.38	0.620	2	10/16/17 13:37	10/23/17 13:02	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736485-04  
 Client ID: VC-IRB-15-ALT-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 66%

Date Collected: 10/09/17 15:55  
 Date Received: 10/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	7880		mg/kg	30.1	4.46	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Antimony, Total	0.071	J	mg/kg	0.482	0.041	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Arsenic, Total	5.01		mg/kg	0.151	0.020	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Barium, Total	22.6		mg/kg	0.904	0.064	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Beryllium, Total	0.319		mg/kg	0.090	0.026	2	10/16/17 13:37	10/24/17 16:31	EPA 3050B	1,6020A	AM
Cadmium, Total	0.077		mg/kg	0.060	0.008	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Calcium, Total	1460		mg/kg	151	18.3	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Chromium, Total	20.1		mg/kg	0.602	0.141	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Cobalt, Total	4.86		mg/kg	0.151	0.016	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Copper, Total	5.08		mg/kg	0.602	0.058	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Iron, Total	14400		mg/kg	60.2	6.20	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Lead, Total	4.33		mg/kg	0.181	0.044	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Magnesium, Total	4490		mg/kg	30.1	3.71	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Manganese, Total	120		mg/kg	0.602	0.134	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.021	0.003	5	10/16/17 14:23	10/21/17 17:37	EPA 7474	1,7474	BV
Nickel, Total	11.3		mg/kg	0.301	0.081	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Potassium, Total	1810		mg/kg	30.1	4.78	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Selenium, Total	3.63		mg/kg	0.602	0.228	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Silver, Total	0.017	J	mg/kg	0.151	0.015	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Sodium, Total	6950		mg/kg	45.2	3.53	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Thallium, Total	0.102		mg/kg	0.060	0.016	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Vanadium, Total	19.7		mg/kg	0.301	0.114	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM
Zinc, Total	33.2		mg/kg	3.01	0.783	2	10/16/17 13:37	10/23/17 13:06	EPA 3050B	1,6020A	AM



Project Name: US WIND  
Project Number: U167-022

Lab Number: L1736485  
Report Date: 11/15/17

## Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1052673-1										
Aluminum, Total	ND		mg/kg	20.0	2.96	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Antimony, Total	0.049	J	mg/kg	0.320	0.027	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Arsenic, Total	ND		mg/kg	0.100	0.013	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Barium, Total	ND		mg/kg	0.600	0.042	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Beryllium, Total	ND		mg/kg	0.060	0.017	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Cadmium, Total	ND		mg/kg	0.040	0.005	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Calcium, Total	ND		mg/kg	100	12.2	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Chromium, Total	ND		mg/kg	0.400	0.094	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Cobalt, Total	ND		mg/kg	0.100	0.011	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Copper, Total	ND		mg/kg	0.400	0.039	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Iron, Total	ND		mg/kg	40.0	4.12	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Lead, Total	ND		mg/kg	0.120	0.029	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Magnesium, Total	ND		mg/kg	20.0	2.46	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Manganese, Total	ND		mg/kg	0.400	0.089	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Nickel, Total	ND		mg/kg	0.200	0.053	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Potassium, Total	ND		mg/kg	20.0	3.18	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Selenium, Total	ND		mg/kg	0.400	0.151	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Silver, Total	ND		mg/kg	0.100	0.010	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Sodium, Total	ND		mg/kg	30.0	2.34	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Thallium, Total	ND		mg/kg	0.040	0.010	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Vanadium, Total	ND		mg/kg	0.200	0.076	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Zinc, Total	ND		mg/kg	2.00	0.520	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1052675-1										
Mercury, Total	ND		mg/kg	0.013	0.002	5	10/16/17 14:23	10/21/17 17:05	1,7474	BV



**Project Name:** US WIND

**Lab Number:** L1736485

**Project Number:** U167-022

**Report Date:** 11/15/17

## Method Blank Analysis Batch Quality Control

### Prep Information

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Digestion Method: EPA 7474



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736485

Report Date: 11/15/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1052673-2 SRM Lot Number: D093-540								
Aluminum, Total	78		-		55-146	-		20
Antimony, Total	156		-		2-204	-		20
Arsenic, Total	106		-		70-130	-		20
Barium, Total	98		-		83-117	-		20
Beryllium, Total	106		-		83-117	-		20
Cadmium, Total	96		-		83-117	-		20
Calcium, Total	99		-		83-117	-		20
Chromium, Total	101		-		80-120	-		20
Cobalt, Total	99		-		84-116	-		20
Copper, Total	97		-		82-118	-		20
Iron, Total	114		-		47-153	-		20
Lead, Total	98		-		82-117	-		20
Magnesium, Total	92		-		77-124	-		20
Manganese, Total	102		-		81-119	-		20
Nickel, Total	99		-		83-117	-		20
Potassium, Total	87		-		71-129	-		20
Selenium, Total	104		-		78-122	-		20
Silver, Total	99		-		76-124	-		20
Sodium, Total	97		-		72-128	-		20
Thallium, Total	90		-		79-121	-		20
Vanadium, Total	103		-		78-122	-		20

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1052673-2 SRM Lot Number: D093-540					
Zinc, Total	96	-	83-117	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1052675-2 SRM Lot Number: D093-540					
Mercury, Total	96	-	72-128	-	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04    QC Batch ID: WG1052673-3    QC Sample: L1735614-04    Client ID: MS Sample												
Aluminum, Total	11100	304	13800	889	Q	-	-		75-125	-		20
Antimony, Total	1.50	75.9	53.6	69	Q	-	-		75-125	-		20
Arsenic, Total	19.4	18.2	37.0	97		-	-		75-125	-		20
Barium, Total	136.	304	392	84		-	-		75-125	-		20
Beryllium, Total	0.672	7.59	7.02	84		-	-		75-125	-		20
Cadmium, Total	4.58	7.74	12.4	101		-	-		75-125	-		20
Calcium, Total	6700	1520	8790	138	Q	-	-		75-125	-		20
Chromium, Total	156.	30.4	199	142	Q	-	-		75-125	-		20
Cobalt, Total	10.2	75.9	81.8	94		-	-		75-125	-		20
Copper, Total	222.	38	267	118		-	-		75-125	-		20
Iron, Total	30600	152	34300	2440	Q	-	-		75-125	-		20
Lead, Total	196.	77.4	286	116		-	-		75-125	-		20
Magnesium, Total	7230	1520	9510	150	Q	-	-		75-125	-		20
Manganese, Total	455.	75.9	567	148	Q	-	-		75-125	-		20
Nickel, Total	40.5	75.9	120	105		-	-		75-125	-		20
Potassium, Total	2000	1520	3780	117		-	-		75-125	-		20
Selenium, Total	7.32	18.2	24.6	95		-	-		75-125	-		20
Silver, Total	4.64	45.5	11.7	16	Q	-	-		75-125	-		20
Sodium, Total	6580	1520	8620	134	Q	-	-		75-125	-		20
Thallium, Total	0.166	18.2	14.8	80		-	-		75-125	-		20
Vanadium, Total	35.4	75.9	113	102		-	-		75-125	-		20

**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1052673-3 QC Sample: L1735614-04 Client ID: MS Sample									
Zinc, Total	328.	75.9	409	107	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1052675-3 QC Sample: L1735614-04 Client ID: MS Sample									
Mercury, Total	4.57	1.36	5.92	99	-	-	80-120	-	20

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1052673-4 QC Sample: L1735614-04 Client ID: DUP Sample						
Aluminum, Total	11100	11600	mg/kg	4		20
Antimony, Total	1.50	1.86	mg/kg	21	Q	20
Arsenic, Total	19.4	20.2	mg/kg	4		20
Barium, Total	136.	151	mg/kg	10		20
Beryllium, Total	0.672	0.685	mg/kg	2		20
Cadmium, Total	4.58	4.75	mg/kg	4		20
Calcium, Total	6700	8810	mg/kg	27	Q	20
Chromium, Total	156.	156	mg/kg	0		20
Cobalt, Total	10.2	10.5	mg/kg	3		20
Copper, Total	222.	224	mg/kg	1		20
Iron, Total	30600	31700	mg/kg	4		20
Lead, Total	196.	204	mg/kg	4		20
Magnesium, Total	7230	7490	mg/kg	4		20
Manganese, Total	455.	467	mg/kg	3		20
Nickel, Total	40.5	41.9	mg/kg	3		20
Potassium, Total	2000	2060	mg/kg	3		20
Selenium, Total	7.32	7.83	mg/kg	7		20
Silver, Total	4.64	4.83	mg/kg	4		20
Sodium, Total	6580	6610	mg/kg	0		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736485

Report Date: 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1052673-4 QC Sample: L1735614-04 Client ID: DUP Sample</b>					
Thallium, Total	0.166	0.177	mg/kg	6	20
Vanadium, Total	35.4	36.6	mg/kg	3	20
Zinc, Total	328.	341	mg/kg	4	20
<b>Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1052675-4 QC Sample: L1735614-04 Client ID: DUP Sample</b>					
Mercury, Total	4.57	4.65	mg/kg	2	20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736485-01  
**Client ID:** VC-IRB-14-ALT-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/09/17 17:00  
**Date Received:** 10/10/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.051		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	ND		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Coarse Sand	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Medium Sand	0.200		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Fine Sand	93.4		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Sand	93.6		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Silt Fine	5.20		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Clay Fine	1.20		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Fines	6.40		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	3.6	J	mg/kg	9.0	3.3	1	10/18/17 14:17	10/18/17 22:32	121,4500NH3-BH	AT
Phosphorus, Total	110		mg/kg	4.8	1.6	.8	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	82.8		%	0.100	0.100	1	-	11/02/17 15:46	121,2540G	LD
Solids, Ash	100		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	0.34		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	12.8		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/06/17 16:16	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/06/17 16:16	91,-	LC
Moisture	17.2		%	0.100	0.100	1	-	11/02/17 15:46	121,2540G	LD
Specific Gravity	2.54		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	84.60		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	22.20		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	73.17		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	28.		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC
Plastic Limit	23.		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC
Plasticity Index	5.0		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC





**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736485-02  
**Client ID:** VC-IRB-14-ALT-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/09/17 17:10  
**Date Received:** 10/10/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.645		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	0.621		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Coarse Sand	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Medium Sand	8.80		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Fine Sand	47.4		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Sand	56.2		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Silt Fine	33.6		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Clay Fine	10.2		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Fines	43.8		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	30		mg/kg	11	4.2	1	10/18/17 14:17	10/18/17 22:35	121,4500NH3-BH	AT
Phosphorus, Total	290		mg/kg	6.8	2.3	.9	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	66.3		%	0.100	0.100	1	-	11/02/17 15:46	121,2540G	LD
Solids, Ash	98		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	2.1		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	32.6		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/06/17 16:57	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/06/17 16:57	91,-	LC
Moisture	33.7		%	0.100	0.100	1	-	11/02/17 15:46	121,2540G	LD
Specific Gravity	2.82		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	94.31		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	28.90		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	73.17		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	36.		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC
Plastic Limit	31.		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC
Plasticity Index	5.0		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736485-03  
**Client ID:** VC-IRB-15-ALT-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/09/17 15:45  
**Date Received:** 10/10/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.087		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	0.084		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Coarse Sand	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Medium Sand	0.300		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Fine Sand	91.1		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Sand	91.4		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Silt Fine	5.40		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Clay Fine	3.20		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Fines	8.60		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	ND		mg/kg	9.0	3.4	1	10/18/17 14:17	10/18/17 22:36	121,4500NH3-BH	AT
Phosphorus, Total	61		mg/kg	5.4	1.8	.9	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	82.6		%	0.100	0.100	1	-	11/02/17 15:46	121,2540G	LD
Solids, Ash	100		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	0.47		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	17.8		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/06/17 17:07	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/06/17 17:07	91,-	LC
Moisture	17.4		%	0.100	0.100	1	-	11/02/17 15:46	121,2540G	LD
Specific Gravity	2.48		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	93.57		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	23.40		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	75.83		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	27.		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC
Plastic Limit	26.		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC
Plasticity Index	1.0		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736485-04  
**Client ID:** VC-IRB-15-ALT-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/09/17 15:55  
**Date Received:** 10/10/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.659		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	0.640		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Coarse Sand	ND		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Medium Sand	11.1		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Fine Sand	48.3		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Sand	59.4		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Silt Fine	30.1		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Clay Fine	10.5		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
% Total Fines	40.6		%	0.100	NA	1	-	11/02/17 14:11	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	22		mg/kg	11	4.0	1	10/18/17 14:17	10/18/17 22:37	121,4500NH3-BH	AT
Phosphorus, Total	280		mg/kg	7.5	2.5	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	66.4		%	0.100	0.100	1	-	11/02/17 15:46	121,2540G	LD
Solids, Ash	98		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	2.0		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	31.1		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/06/17 17:17	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/06/17 17:17	91,-	LC
Moisture	33.6		%	0.100	0.100	1	-	11/02/17 15:46	121,2540G	LD
Specific Gravity	2.87		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	102.9		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	32.80		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	77.48		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	35.		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC
Plastic Limit	29.		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC
Plasticity Index	6.0		-	-	NA	1	-	11/15/17 13:17	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1053383-1										
Phosphorus, Total	1.7	J	mg/kg	5.0	1.7	1	-	10/17/17 19:00	121,4500P-E	CW
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1053590-1										
Nitrogen, Ammonia	ND		mg/kg	7.5	0.02	1	10/18/17 14:17	10/18/17 22:29	121,4500NH3-BH	AT
General Chemistry - Mansfield Lab for sample(s): 01-04 Batch: WG1060452-1										
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/06/17 16:01	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/06/17 16:01	91,-	LC
Total Organic Carbon - Mansfield Lab for sample(s): 01-04 Batch: WG1060823-1										
Total Organic Carbon (Rep1)	ND		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	ND		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1053383-2								
Phosphorus, Total	90		-		52-148	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1053590-2								
Nitrogen, Ammonia	99		-		83-115	-		20
General Chemistry - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060452-2								
% Soot (Rep 1)	97		-		75-125	-		25
% Soot (Rep 2)	96		-		75-125	-		25
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060823-2								
Total Organic Carbon (Rep1)	92		-		75-125	-		25
Total Organic Carbon (Rep2)	83		-		75-125	-		25

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1053383-4 QC Sample: L1736278-15 Client ID: MS Sample												
Phosphorus, Total	460	361	820	100		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1053590-4 QC Sample: L1736485-01 Client ID: VC-IRB-14-ALT-S1												
Nitrogen, Ammonia	3.6J	480	470	97		-	-		55-144	-		20
General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1060452-4 QC Sample: L1736485-01 Client ID: VC-IRB-14-ALT-S1												
% Soot (Rep 1)	ND	0.6	0.626	104		-	-		75-125	-		25
% Soot (Rep 2)	ND	0.612	0.636	104		-	-		75-125	-		25
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1060823-4 QC Sample: L1737042-04 Client ID: MS Sample												
Total Organic Carbon (Rep1)	8.26	1.33	8.41	11	Q	-	-		75-125	-		25
Total Organic Carbon (Rep2)	8.22	1.73	10.4	126	Q	-	-		75-125	-		25

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1053383-3 QC Sample: L1736278-15 Client ID: DUP Sample						
Phosphorus, Total	460	470	mg/kg	2		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1053590-3 QC Sample: L1736485-01 Client ID: VC-IRB-14-ALT-S1						
Nitrogen, Ammonia	3.6J	4.2J	mg/kg	NC		20
General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1058900-1 QC Sample: L1736485-01 Client ID: VC-IRB-14-ALT-S1						
Solids, Total	82.8	83.3	%	1		10
Moisture	17.2	16.7	%	3		10
Grain Size Analysis - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1059017-1 QC Sample: L1736485-01 Client ID: VC-IRB-14-ALT-S1						
Cobbles	ND	ND	%	NC		20
% Coarse Gravel	ND	ND	%	NC		20
% Fine Gravel	ND	ND	%	NC		20
% Total Gravel	ND	ND	%	NC		20
% Coarse Sand	ND	ND	%	NC		20
% Medium Sand	0.200	0.100	%	67	Q	20
% Fine Sand	93.4	86.7	%	7		20
% Total Sand	93.6	86.8	%	8		20
% Silt Fine	5.20	10.6	%	68	Q	20
% Clay Fine	1.20	2.60	%	74	Q	20
% Total Fines	6.40	13.2	%	69	Q	20

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1060349-1 QC Sample: L1736485-01 Client ID: VC-IRB-14-ALT-S1</b>					
Solids, Ash	100	100U	%	0	
Organic Matter, Total	0.34	ND	%	NC	
Moisture	12.8	21.2	%	49	Q 10
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1060447-1 QC Sample: L1736603-01 Client ID: DUP Sample</b>					
Specific Gravity	2.80	2.54U	-	10	20
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1060452-3 QC Sample: L1736485-01 Client ID: VC-IRB-14-ALT-S1</b>					
% Soot (Rep 1)	ND	ND	%	NC	25
% Soot (Rep 2)	ND	ND	%	NC	25
<b>Density of Soil - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1060464-1 QC Sample: L1736603-01 Client ID: DUP Sample</b>					
Bulk Density	94.05	98.83	lbs/ft3	5	20
Moisture	18.00	18.30	%	2	20
Dry Density	79.70	83.53	lbs/ft3	5	20
<b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1060823-3 QC Sample: L1737042-04 Client ID: DUP Sample</b>					
Total Organic Carbon (Rep1)	8.26	7.95	%	4	25
Total Organic Carbon (Rep2)	8.22	7.79	%	5	25
<b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1060823-5 QC Sample: L1737042-06 Client ID: DUP Sample</b>					
Total Organic Carbon (Rep1)	8.35	8.10	%	3	25
Total Organic Carbon (Rep2)	8.40	8.27	%	2	25



## Lab Duplicate Analysis

Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736485

Report Date: 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Total Organic Carbon - Mansfield Lab</b> Associated sample(s): 01-04 QC Batch ID: WG1060823-7 QC Sample: L1737042-11 Client ID: DUP Sample					
Total Organic Carbon (Rep1)	7.64	7.55	%	1	25
Total Organic Carbon (Rep2)	7.56	7.59	%	0	25
<b>Atterberg Limits - Mansfield Lab</b> Associated sample(s): 01-04 QC Batch ID: WG1063330-1 QC Sample: L1736485-03 Client ID: VC-IRB-15-ALT-S1					
Liquid Limit	27.	27	-	0	20
Plastic Limit	26.	24	-	8	20
Plasticity Index	1.0	3.0	-	100	Q 20

**Project Name:** US WIND  
**Project Number:** U167-022

**Serial\_No:**11151719:55  
**Lab Number:** L1736485  
**Report Date:** 11/15/17

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Cooler Information**

**Cooler**                      **Custody Seal**  
A                                      Absent

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1736485-01A	Glass 250ml/8oz unpreserved	A	NA		3.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736485-01B	Glass 500ml/16oz unpreserved	A	NA		3.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736485-01C	Amber 120ml unpreserved	A	NA		3.7	Y	Absent		SUB-DIOXIN-1613B(365)
L1736485-01D	Amber 120ml unpreserved	A	NA		3.7	Y	Absent		SUB-PCB-1668()
L1736485-01E	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1736485-01F	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

\*Values in parentheses indicate holding time in days



**Project Name:** US WIND  
**Project Number:** U167-022

**Serial\_No:** 11151719:55  
**Lab Number:** L1736485  
**Report Date:** 11/15/17

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1736485-01G	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736485-02A	Glass 250ml/8oz unpreserved	A	NA		3.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736485-02B	Glass 500ml/16oz unpreserved	A	NA		3.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736485-02C	Amber 120ml unpreserved	A	NA		3.7	Y	Absent		SUB-DIOXIN-1613B(365)
L1736485-02D	Amber 120ml unpreserved	A	NA		3.7	Y	Absent		SUB-PCB-1668()
L1736485-02E	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736485-02F	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736485-02G	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()

\*Values in parentheses indicate holding time in days



**Project Name:** US WIND  
**Project Number:** U167-022

**Serial\_No:**11151719:55  
**Lab Number:** L1736485  
**Report Date:** 11/15/17

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736485-03A	Glass 250ml/8oz unpreserved	A	NA		3.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736485-03B	Glass 500ml/16oz unpreserved	A	NA		3.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736485-03C	Amber 120ml unpreserved	A	NA		3.7	Y	Absent		SUB-DIOXIN-1613B(365)
L1736485-03D	Amber 120ml unpreserved	A	NA		3.7	Y	Absent		SUB-PCB-1668()
L1736485-03E	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736485-03F	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736485-03G	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736485-04A	Glass 250ml/8oz unpreserved	A	NA		3.7	Y	Absent		TPHOS-4500(28),NH3-4500(28)

\*Values in parentheses indicate holding time in days



**Project Name:** US WIND  
**Project Number:** U167-022

**Serial\_No:**11151719:55  
**Lab Number:** L1736485  
**Report Date:** 11/15/17

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736485-04B	Glass 500ml/16oz unpreserved	A	NA		3.7	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736485-04C	Amber 120ml unpreserved	A	NA		3.7	Y	Absent		SUB-DIOXIN-1613B(365)
L1736485-04D	Amber 120ml unpreserved	A	NA		3.7	Y	Absent		SUB-PCB-1668()
L1736485-04E	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736485-04F	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736485-04G	Plastic 8oz unpreserved for Grain Size	A	NA		3.7	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()

\*Values in parentheses indicate holding time in days



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

**Report Format:** DU Report with 'J' Qualifiers



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#### Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736485  
**Report Date:** 11/15/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 12 Annual Book of ASTM Standards. (American Society for Testing and Materials) ASTM International.
- 13 Determination of Total Organic Carbon in Sediment. U.S. EPA, Region II. July 27, 1988.
- 91 Analysis of Soot following ES&T publications by Accardi-Dey and Gschwend, 2003; and Gustafsson (et. al.), 1997.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

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We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.





# **ASTM D6913/D7928**

## **GRAIN SIZE ANALYSIS**



## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-14-ALT-S1

Sample Number: L1736485-01

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 48.87  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
48.87	0.00	3	0.00	0.00	100.0
		0.75	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.00	0.00	100.0
		#20	0.02	0.00	100.0
		#40	0.07	0.00	99.8
		#60	0.25	0.00	99.3
		#140	40.18	0.00	17.1
		#200	5.22	0.00	6.4

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 6.4  
 Weight of hydrometer sample = 63.54  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0070	1.0072	0.0134	7.0	14.4	0.0360	1.2
5.00	21.4	1.0070	1.0072	0.0134	7.0	14.4	0.0228	1.2
15.00	21.4	1.0070	1.0072	0.0134	7.0	14.4	0.0132	1.2
30.00	21.4	1.0070	1.0072	0.0134	7.0	14.4	0.0093	1.2
60.00	21.4	1.0070	1.0072	0.0134	7.0	14.4	0.0066	1.2
240.00	21.4	1.0070	1.0072	0.0134	7.0	14.4	0.0033	1.2
1440.00	21.4	1.0070	1.0072	0.0134	7.0	14.4	0.0013	1.2

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.2	93.4	93.6	5.2	1.2	6.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0669	0.0904	0.1023	0.1106	0.1243	0.1369	0.1496	0.1631	0.1954	0.2056	0.2175	0.2323

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.50	1.80	1.05

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## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-14-ALT-S1

Sample Number: WG1059017-1

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 53.94  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
53.94	0.00	3	0.00	0.00	100.0
		0.75	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.00	0.00	100.0
		#20	0.00	0.00	100.0
		#40	0.07	0.00	99.9
		#60	0.25	0.00	99.4
		#140	41.31	0.00	22.8
		#200	5.18	0.00	13.2

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 13.2

Weight of hydrometer sample = 50.00

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0060	1.0062	0.0134	6.0	14.7	0.0364	2.6
5.00	21.4	1.0060	1.0062	0.0134	6.0	14.7	0.0230	2.6
15.00	21.4	1.0060	1.0062	0.0134	6.0	14.7	0.0133	2.6
30.00	21.4	1.0060	1.0062	0.0134	6.0	14.7	0.0094	2.6
60.00	21.4	1.0060	1.0062	0.0134	6.0	14.7	0.0066	2.6
240.00	21.4	1.0060	1.0062	0.0134	6.0	14.7	0.0033	2.6
1440.00	21.4	1.0060	1.0062	0.0134	6.0	14.7	0.0014	2.6

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.1	86.7	86.8	10.6	2.6	13.2

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0456	0.0618	0.0839	0.1001	0.1177	0.1317	0.1453	0.1594	0.1929	0.2034	0.2157	0.2310

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.47	2.58	1.41

Alpha Analytical



## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-14-ALT-S2

Sample Number: L1736485-02

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 75.84  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
75.84	0.00	3	0.00	0.00	100.0
		0.75	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.03	0.00	100.0
		#20	2.76	0.00	96.3
		#40	3.91	0.00	91.2
		#60	2.12	0.00	88.4
		#140	21.35	0.00	60.2
		#200	12.44	0.00	43.8

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 43.8  
 Weight of hydrometer sample = 67.70  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0145	1.0147	0.0134	14.5	12.5	0.0335	15.2
5.00	21.4	1.0130	1.0132	0.0134	13.0	12.9	0.0215	13.7
15.00	21.4	1.0115	1.0117	0.0134	11.5	13.3	0.0126	12.1
30.00	21.4	1.0100	1.0102	0.0134	10.0	13.6	0.0090	10.6
60.00	21.4	1.0100	1.0102	0.0134	10.0	13.6	0.0064	10.6
240.00	21.4	1.0085	1.0087	0.0134	8.5	14.0	0.0032	9.0
1440.00	21.4	1.0080	1.0082	0.0134	8.0	14.2	0.0013	8.5

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	8.8	47.4	56.2	33.6	10.2	43.8

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0046	0.0314	0.0417	0.0552	0.0692	0.0854	0.1055	0.1743	0.2089	0.2969	0.7239

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.43	23.05	6.32

Alpha Analytical





## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-15-ALT-S1

Sample Number: L1736485-03

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 53.88  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
53.88	0.00	3	0.00	0.00	100.0
		0.75	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.00	0.00	100.0
		#20	0.02	0.00	100.0
		#40	0.13	0.00	99.7
		#60	0.25	0.00	99.3
		#140	41.74	0.00	21.8
		#200	7.13	0.00	8.6

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 8.6  
 Weight of hydrometer sample = 46.00  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0120	1.0122	0.0134	12.0	13.1	0.0344	3.6
5.00	21.4	1.0110	1.0112	0.0134	11.0	13.4	0.0219	3.3
15.00	21.4	1.0110	1.0112	0.0134	11.0	13.4	0.0127	3.3
30.00	21.4	1.0105	1.0107	0.0134	10.5	13.5	0.0090	3.2
60.00	21.4	1.0105	1.0107	0.0134	10.5	13.5	0.0064	3.2
240.00	21.4	1.0105	1.0107	0.0134	10.5	13.5	0.0032	3.2
1440.00	21.4	1.0100	1.0102	0.0134	10.0	13.6	0.0013	3.0

## Fractional Components

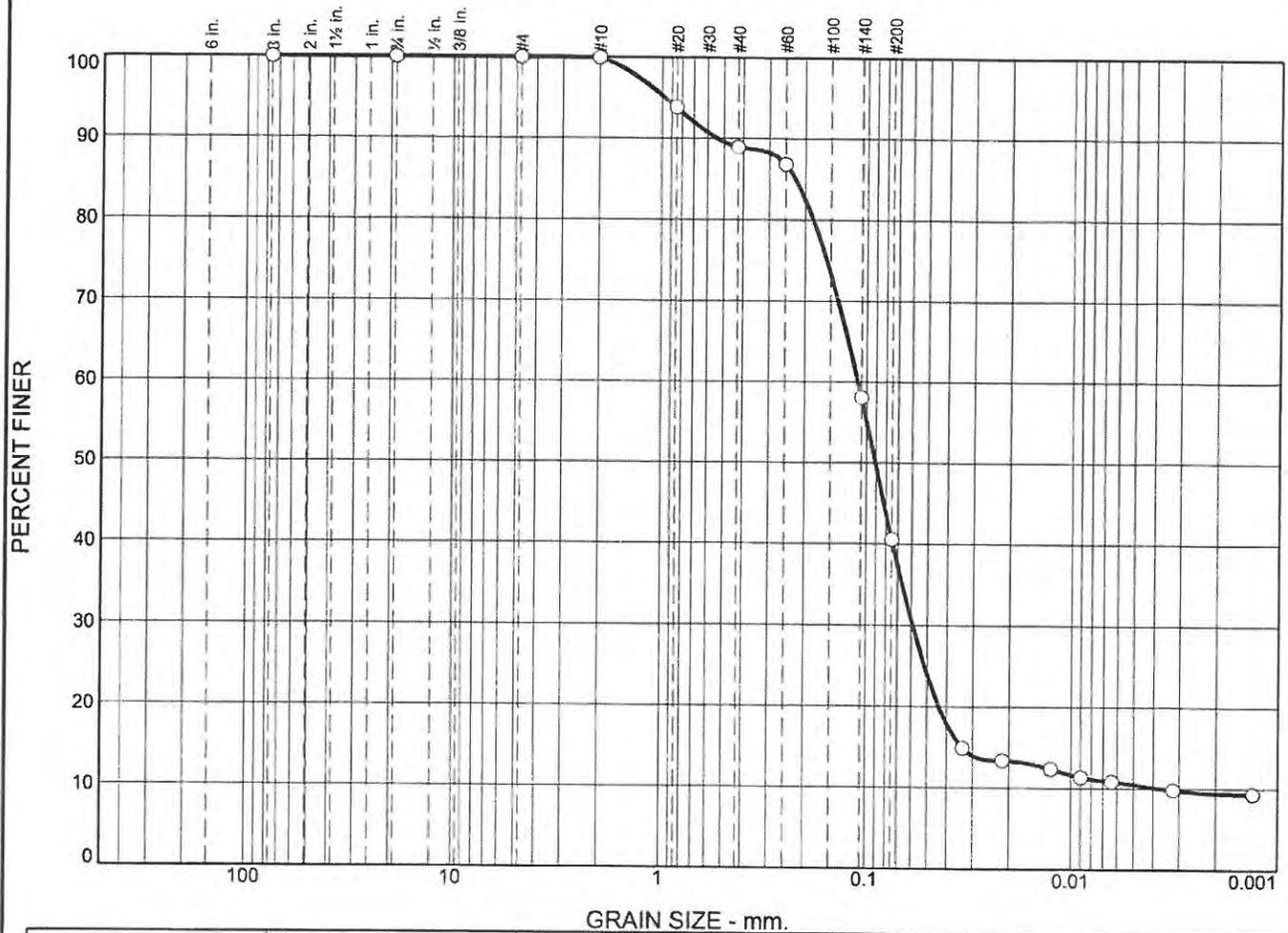
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.3	91.1	91.4	5.4	3.2	8.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0575	0.0802	0.0935	0.1031	0.1179	0.1311	0.1444	0.1584	0.1920	0.2027	0.2153	0.2310

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.47	1.98	1.09

Alpha Analytical

# Particle Size Distribution Report



## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-15-ALT-S2

Sample Number: L1736485-04

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 62.95  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
62.95	0.00	3	0.00	0.00	100.0
		0.75	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.03	0.00	100.0
		#20	3.88	0.00	93.8
		#40	3.07	0.00	88.9
		#60	1.36	0.00	86.8
		#140	18.08	0.00	58.0
		#200	10.97	0.00	40.6

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 40.6  
 Weight of hydrometer sample = 64.13  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0145	1.0147	0.0134	14.5	12.5	0.0335	14.9
5.00	21.4	1.0130	1.0132	0.0134	13.0	12.9	0.0215	13.4
15.00	21.4	1.0120	1.0122	0.0134	12.0	13.1	0.0125	12.4
30.00	21.4	1.0110	1.0112	0.0134	11.0	13.4	0.0090	11.4
60.00	21.4	1.0105	1.0107	0.0134	10.5	13.5	0.0064	10.8
240.00	21.4	1.0095	1.0097	0.0134	9.5	13.8	0.0032	9.8
1440.00	21.4	1.0090	1.0092	0.0134	9.0	13.9	0.0013	9.3

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	11.1	48.3	59.4	30.1	10.5	40.6

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0037	0.0337	0.0437	0.0590	0.0741	0.0904	0.1104	0.1826	0.2241	0.5398	0.9703

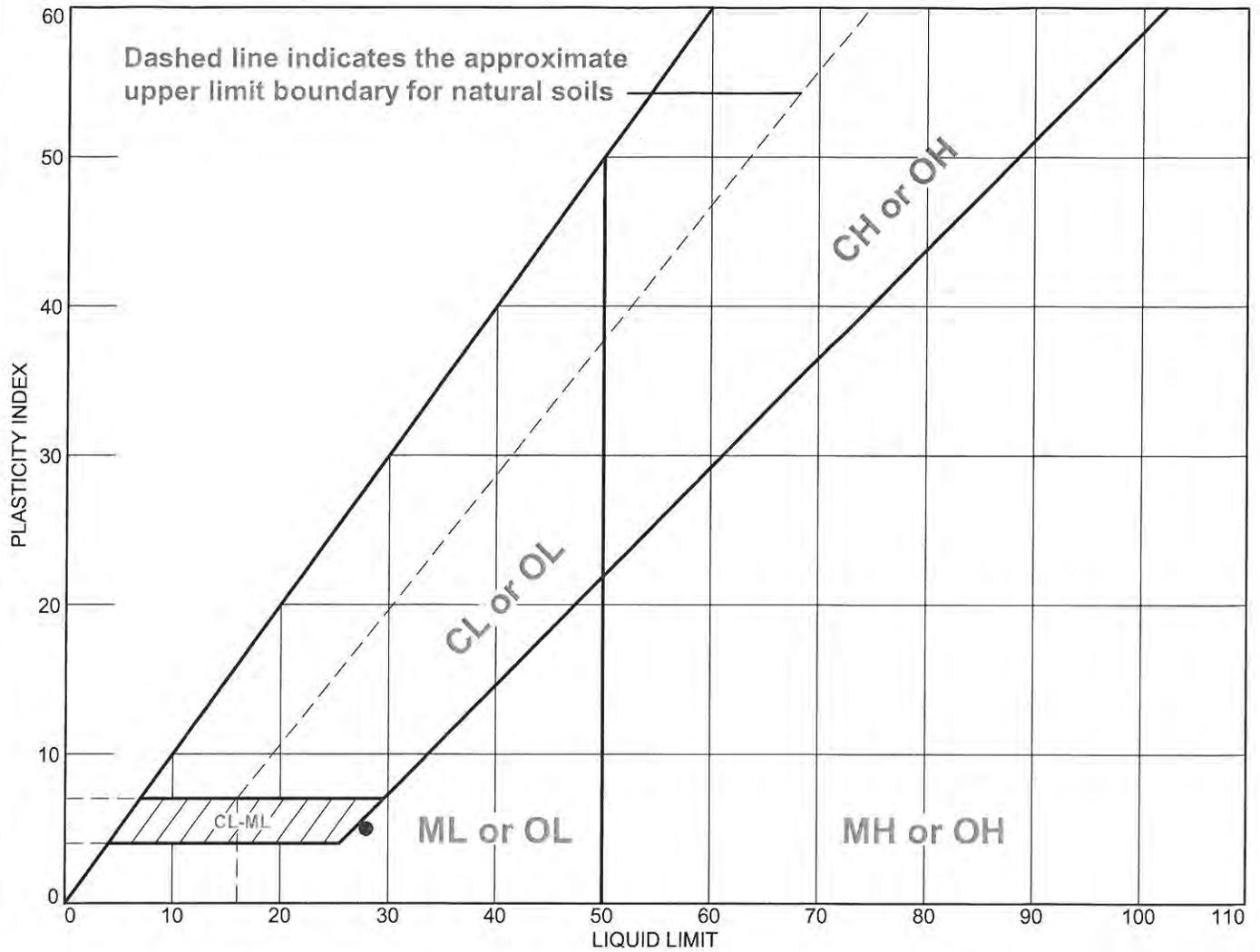
Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.51	30.21	8.63

Alpha Analytical

## **ASTM D4318-10**

### **Liquid Limit, Plastic Limit and Plasticity Index of Soils**

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	28	23	5	99.8	6.4	SP

**Project No.** \_\_\_\_\_ **Client:** \_\_\_\_\_

**Project:** \_\_\_\_\_

● **Source of Sample:** VC-IRB-14-ALT-S1      **Sample Number:** L1736485-01

---

**Alpha Analytical**  
Mansfield, MA

**Remarks:**

**Figure**

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/15/2017

Location: VC-IRB-14-ALT-S1

Sample Number: L1736485-01

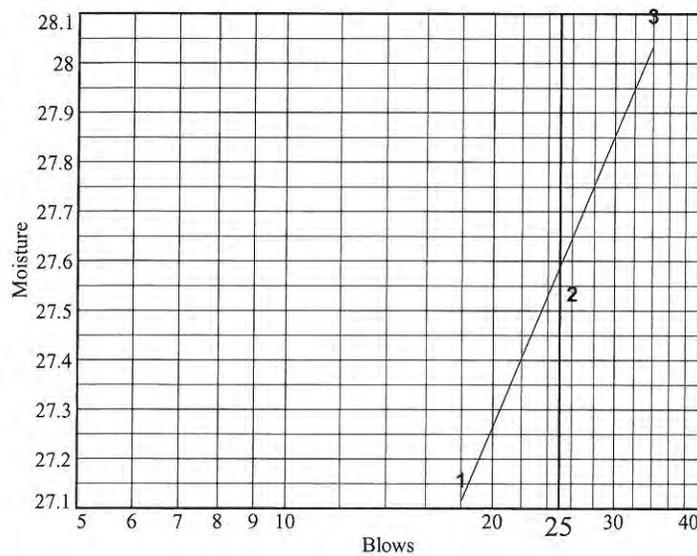
%<#40: 99.8

%<#200: 6.4

USCS: SP

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.681	7.613	7.696			
Dry+Tare	5.53	6.25	6.29			
Tare	1.292	1.30	1.286			
# Blows	18	26	34			
Moisture	27.2	27.5	28.1			

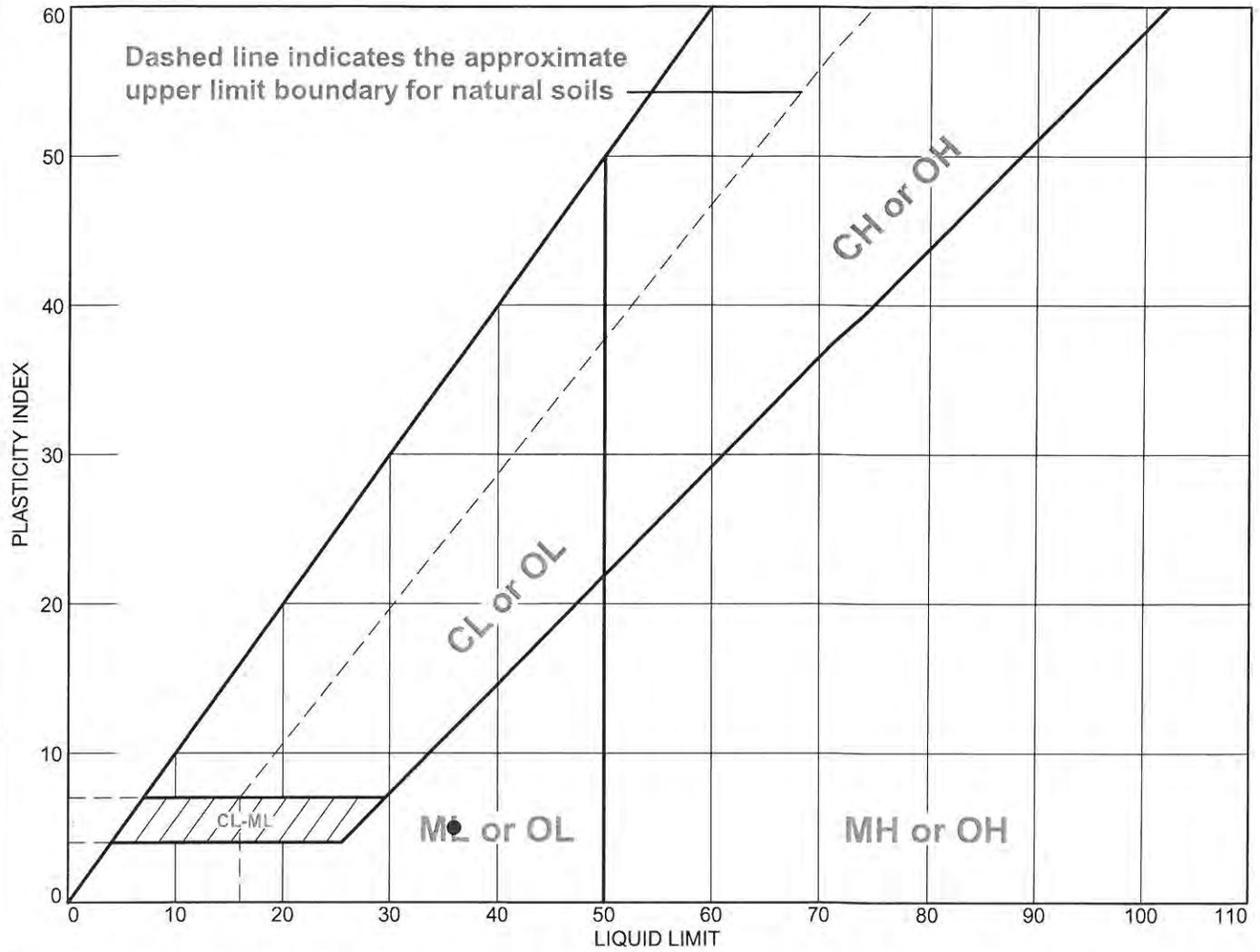


Liquid Limit= 28  
 Plastic Limit= 23  
 Plasticity Index= 5

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	4.335			
Dry+Tare	3.77			
Tare	1.303			
Moisture	22.9			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	36	31	5	91.2	43.8	SP

Project No.	Client:	Remarks:
Project:		
● Source of Sample: VC-IRB-14-ALT-S2	Sample Number: L1736485-02	
Alpha Analytical		Figure
Mansfield, MA		

LIQUID AND PLASTIC LIMIT TEST DATA

11/15/2017

Location: VC-IRB-14-ALT-S2

Sample Number: L1736485-02

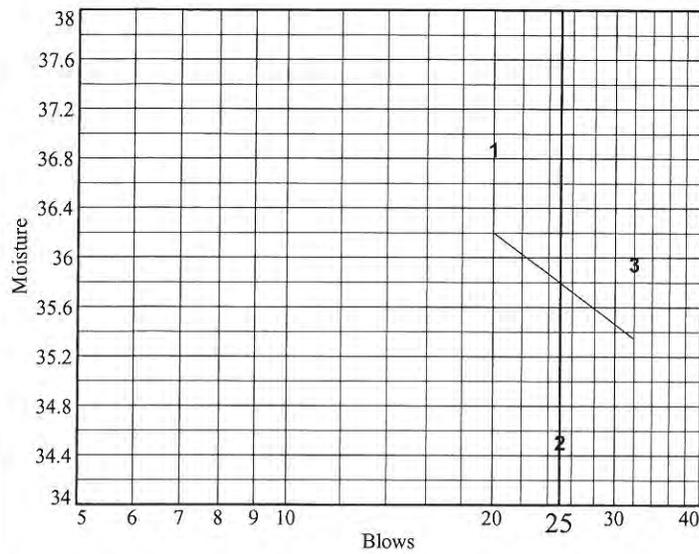
%<#40: 91.2

%<#200: 43.8

USCS: SP

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	5.572	6.17	6.371			
Dry+Tare	4.42	4.92	5.03			
Tare	1.296	1.298	1.3			
# Blows	20	25	32			
Moisture	36.9	34.5	36.0			



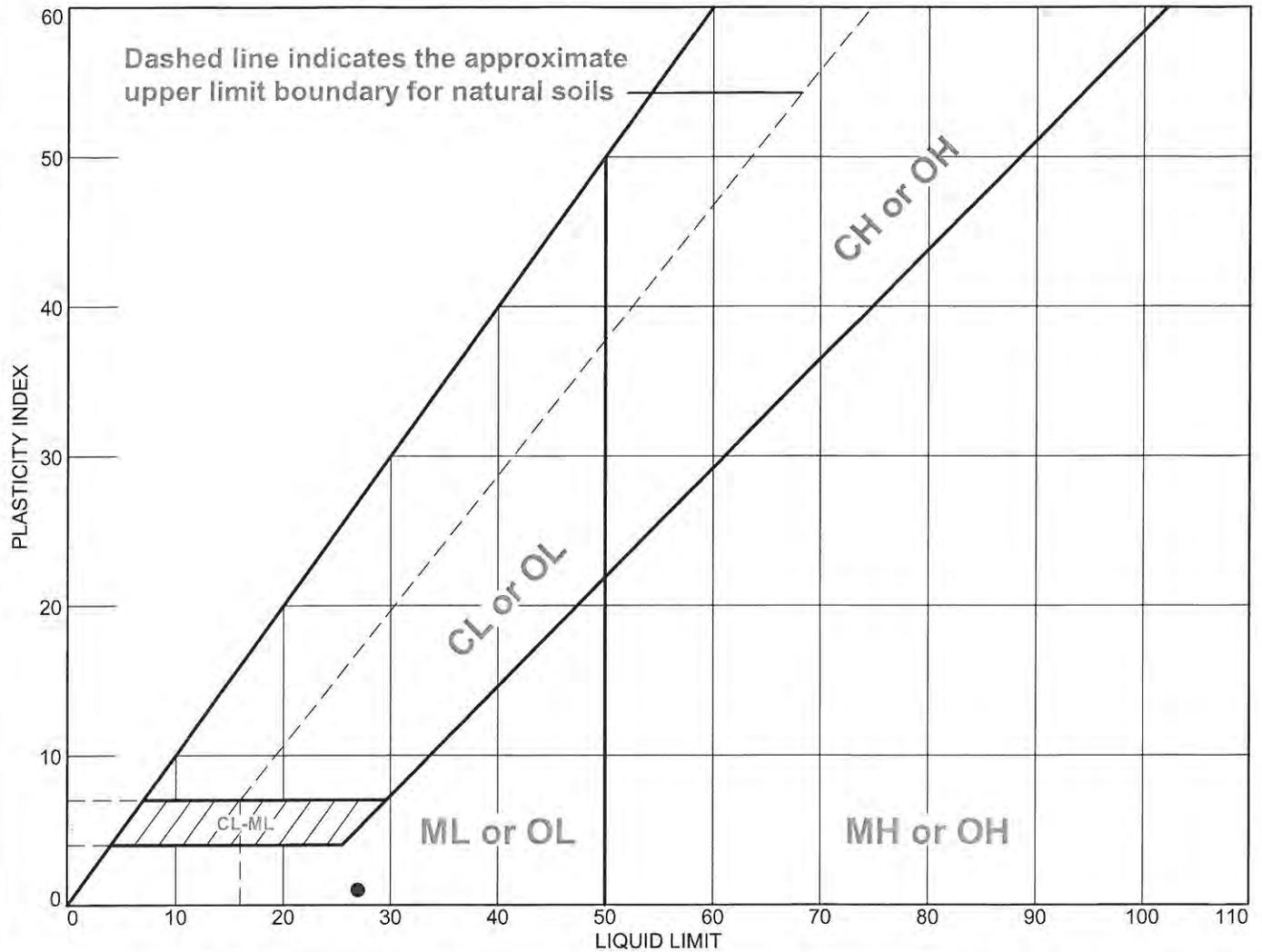
Liquid Limit= 36  
 Plastic Limit= 31  
 Plasticity Index= 5

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	3.197			
Dry+Tare	2.75			
Tare	1.294			
Moisture	30.7			



# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	27	26	1	99.7	8.6	SP

Project No.                      Client:

Project:

● Source of Sample: VC-IRB-15-ALT-S1      Sample Number: L1736485-03

**Alpha Analytical**

**Mansfield, MA**

Remarks:

**Figure**

LIQUID AND PLASTIC LIMIT TEST DATA

11/15/2017

Location: VC-IRB-15-ALT-S1

Sample Number: L1736485-03

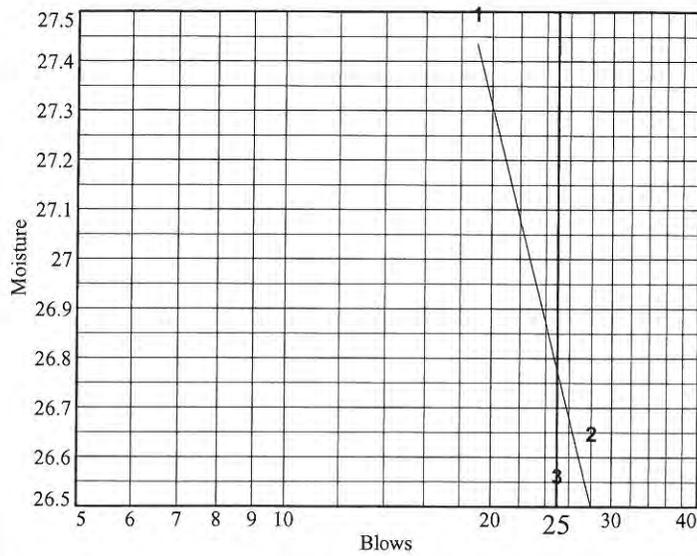
%<#40: 99.7

%<#200: 8.6

USCS: SP

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	7.881	8.904	8.16			
Dry+Tare	6.46	7.304	6.72			
Tare	1.292	1.3	1.299			
# Blows	19	28	25			
Moisture	27.5	26.6	26.6			

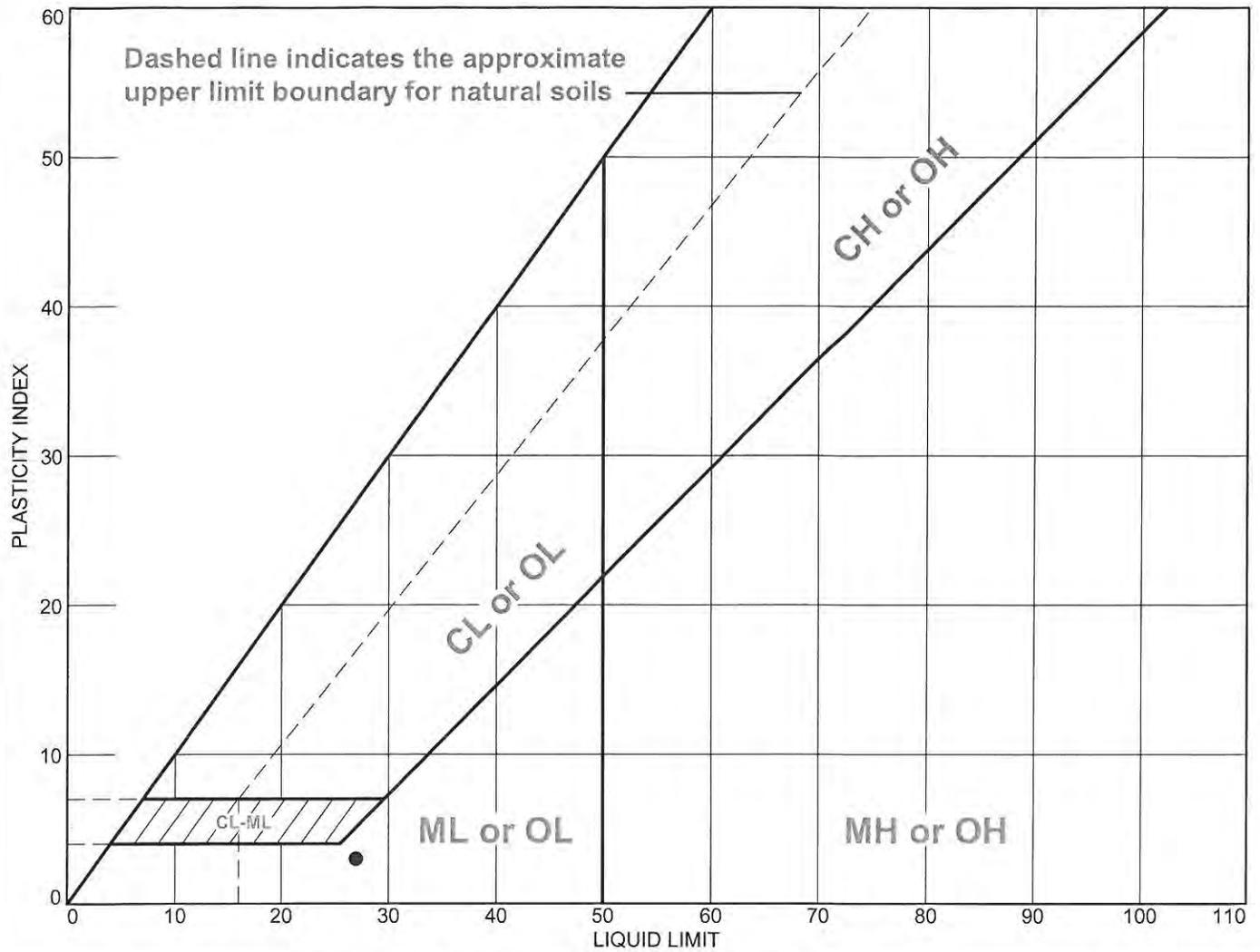


Liquid Limit= 27  
 Plastic Limit= 26  
 Plasticity Index= 1

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	4.177			
Dry+Tare	3.59			
Tare	1.29			
Moisture	25.5			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	27	24	3	99.7	8.6	SP

Project No.                      Client:

Project:

● Source of Sample: VC-IRB-15-ALT-S1      Sample Number: WG1063330-1

**Alpha Analytical**  
Mansfield, MA

Remarks:

Figure

LIQUID AND PLASTIC LIMIT TEST DATA

11/15/2017

Location: VC-IRB-15-ALT-S1

Sample Number: WG1063330-1

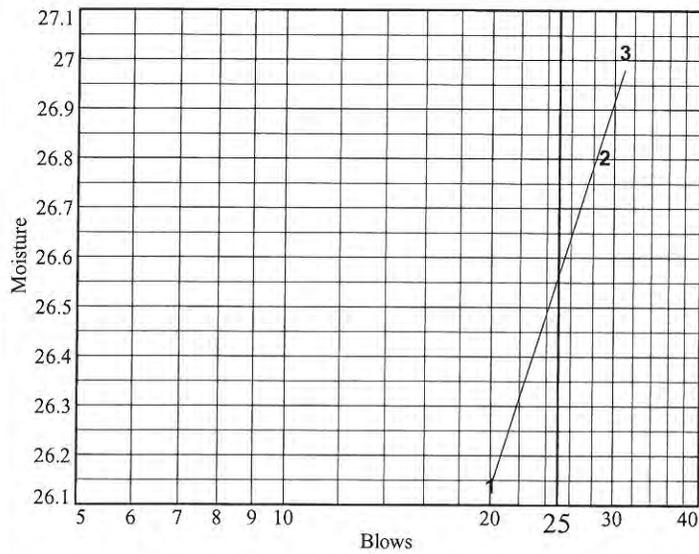
%<#40: 99.7

%<#200: 8.6

USCS: SP

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	7.771	8.414	8.867			
Dry+Tare	6.43	6.91	7.26			
Tare	1.3	1.299	1.312			
# Blows	20	29	31			
Moisture	26.1	26.8	27.0			

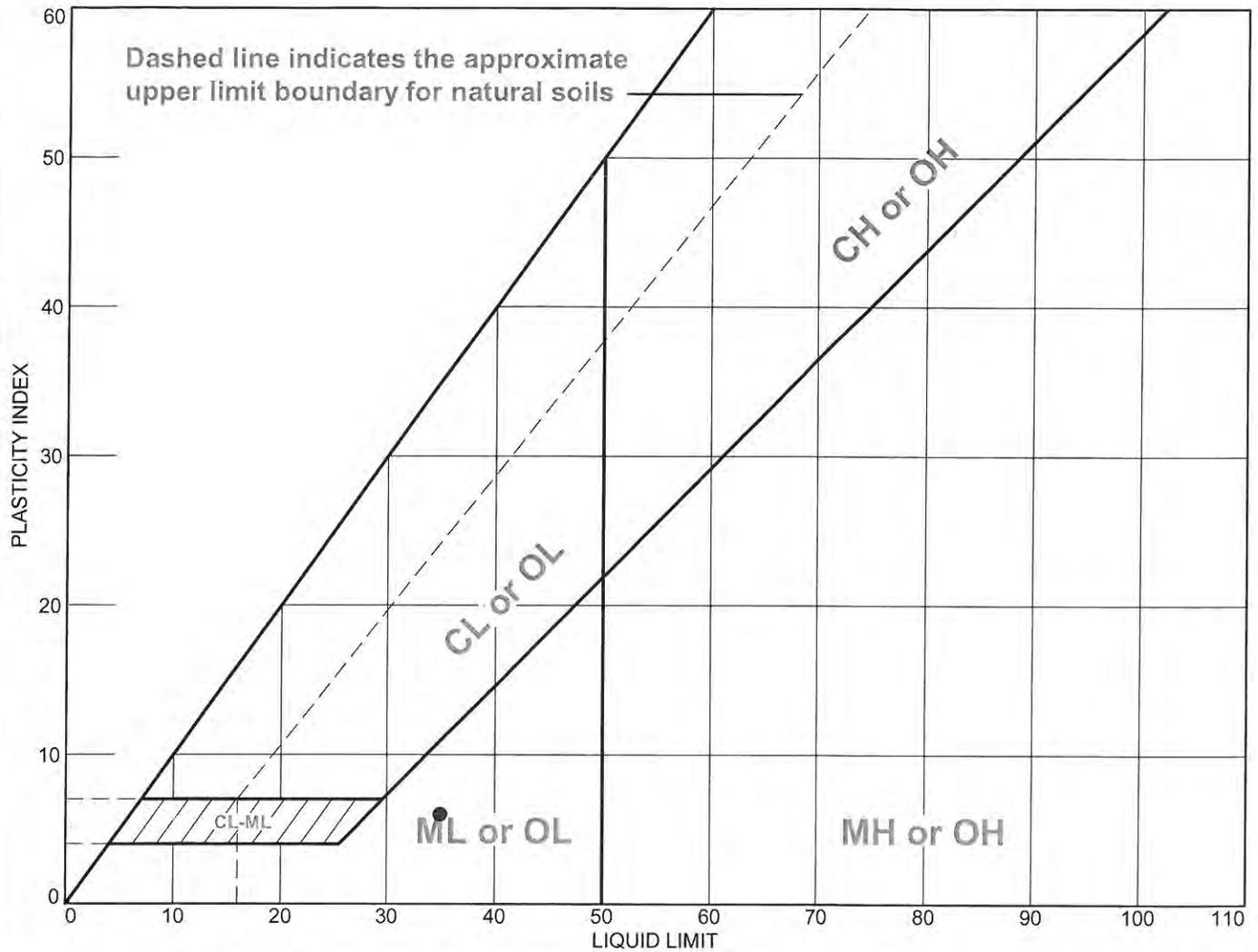


Liquid Limit= 27  
 Plastic Limit= 24  
 Plasticity Index= 3

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	3.952			
Dry+Tare	3.43			
Tare	1.293			
Moisture	24.4			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	35	29	6	88.9	40.6	SP

Project No.                      Client:

Project:

● Source of Sample: VC-IRB-15-ALT-S2              Sample Number: L1736485-04

**Alpha Analytical**

**Mansfield, MA**

Remarks:

Figure

LIQUID AND PLASTIC LIMIT TEST DATA

11/15/2017

Location: VC-IRB-15-ALT-S2

Sample Number: L1736485-04

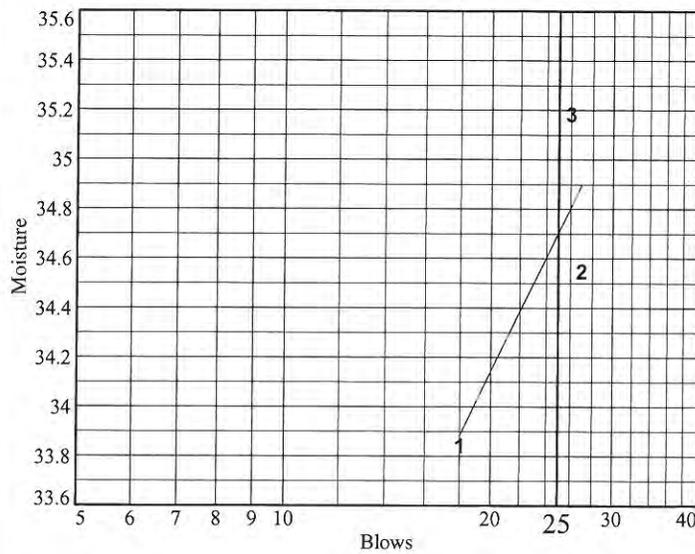
%<#40: 88.9

%<#200: 40.6

USCS: SP

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	6.093	6.208	7.599			
Dry+Tare	4.88	4.95	5.96			
Tare	1.296	1.309	1.302			
# Blows	18	27	26			
Moisture	33.8	34.6	35.2			



Liquid Limit= 35  
 Plastic Limit= 29  
 Plasticity Index= 6

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	3.243			
Dry+Tare	2.81			
Tare	1.301			
Moisture	28.7			

## Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624:** m/p-xylene, o-xylene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 300:** DW: Bromide

**EPA 6860:** NPW and SCM: Perchlorate

**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation

**EPA 9012B:** NPW: Total Cyanide

**EPA 9050A:** NPW: Specific Conductance

**SM3500:** NPW: Ferrous Iron

**SM4500:** NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**SM5310C:** DW: Dissolved Organic Carbon

### Mansfield Facility

**SM 2540D:** TSS

**EPA 3005A** NPW

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

**EPA 245.1 Hg.**

**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



# CHAIN OF CUSTODY

PAGE 1 OF 1

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-8220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

Date Rec'd in Lab: 10/11/17

ALPHA Job #: L17 30485

**Client Information**  
 Client: ESS Group, Inc.  
 Address: 1005<sup>th</sup> Ave, 5<sup>th</sup> FLR  
Waltham, Ma 02451  
 Phone: 781-419-7718  
 Email: M.phillips@cssgroup.com

**Project Information**  
 Project Name: US WIND  
 Project Location: Delaware  
 Project #: U167-022  
 Project Manager: Liz Gowell  
 ALPHA Quote #: 3888

**Report Information - Data Deliverables**  
 ADEx  EMAIL

**Billing Information**  
 Same as Client info PO #:

**Regulatory Requirements & Project Information Requirements**  
 Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program Delaware Criteria Sediments

**Turn-Around Time**  
 Standard  RUSH (only confirmed if pre-approved!)  
 Date Due:

Additional Project Information:  
\* See Liz Porta for Physical and Chemical Analysis parameters.

ANALYSIS	VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	SAMPLE INFO
	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH	
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PP13	Preservation <input type="checkbox"/> Lab to do
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	Sample Comments
TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint		

*Physical Analysis*  
*Chemical Analysis*

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
<u>30485.01</u>	<u>VC-IRB-14-ALT-S1</u>	<u>10/9/17</u>	<u>1700</u>	<u>SE</u>	<u>MP+GR</u>
<u>02</u>	<u>VC-IRB-14-ALT-S2</u>	<u>10/9/17</u>	<u>1710</u>	↓	↓
<u>03</u>	<u>VC-IRB-15-ALT-S1</u>	<u>10/9/17</u>	<u>1545</u>	↓	↓
<u>04</u>	<u>VC-IRB-15-ALT-S2</u>	<u>10/9/17</u>	<u>1555</u>	↓	↓

**Container Type**  
 P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle

**Preservative**  
 A= None  
 B= HCl  
 C= HNO<sub>3</sub>  
 D= H<sub>2</sub>SO<sub>4</sub>  
 E= NaOH  
 F= MeOH  
 G= NaHSO<sub>4</sub>  
 H= Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>  
 I= Ascorbic Acid  
 J= NH<sub>4</sub>Cl  
 K= Zn Acetate  
 O= Other

Container Type	<u>EA</u>	<u>PA</u>
Preservative	<u>A</u>	<u>A</u>

Relinquished By: M. Phillips Date/Time: 10/10/17 9:47

Received By: Tom Clark Date/Time: 10/10/17 9:47

Tom Clark AAC 10/17/17 11:30

Tom Clark AAC 10/17/17 12:30

Tom Clark AAC 10/17/17 12:30

Tom Clark AAC 10/17/17 12:30

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 02/11/2012)



# CHAIN OF CUSTODY

PAGE 1 OF 1



Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

## Project Information

Project Name:  
 Project Location: DE  
 Project #:  
 Project Manager: Elizabeth Porta  
 ALPHA Quote #:

## Client Information

Client: Alpha Analytical Lab  
 Address: 320 Forbes Blvd.  
 Mansfield, Ma 02048  
 Phone: 508-822-9300  
 Fax:  
 Email: subreports@alphalab.com, eporta@alphalab.com

## Turn-Around Time

Standard     Rush (ONLY IF PRE-APPROVED)  
 Due Date:                      Time:

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Please include Alpha job #L1736485 on this report.

Date Rec'd in Lab:                      ALPHA Job #: L1736485

Report Information	Data Deliverables	Billing Information
<input type="checkbox"/> FAX	<input checked="" type="checkbox"/> EMAIL	<input type="checkbox"/> Same as Client info
<input type="checkbox"/> ADEx	<input type="checkbox"/> Add'l Deliverables	PO #:

## Regulatory Requirements/Report Limits

State/Fed Program:                      Criteria:

## MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes     No    Are MCP Analytical Methods Required?  
 Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS														SAMPLE HANDLING Filtration <input type="checkbox"/> Done <input type="checkbox"/> Not Needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)	TOTAL # BOTTLES
Dioxin 1613B	Pest 1668														
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736485-01	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736485-02	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736485-03	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736485-04	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
	VC-IRB-14-ALT-S1	10/09/17	17:00	Sediment	
	VC-IRB-14-ALT-S2	10/09/17	17:10	Sediment	
	VC-IRB-15-ALT-S1	10/09/17	15:46	Sediment	
	VC-IRB-15-ALT-S2	10/09/17	15:55	Sediment	

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

Container Type	A	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Ken O'Ball...</i>	10/17/17	<i>...</i>	17:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

November 15, 2017

Ms. Elizabeth Porta  
Alpha Analytical Laboratory  
8 Walkup Drive  
Westborough, Massachusetts 01581

Re: US Wind DXN and PCBs  
Work Order: 11536  
SDG: L1736485

Dear Ms. Porta:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 18, 2017. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins  
Project Manager

Enclosures



**SAMPLE RECEIPT CHECKLIST**  
Cape Fear Analytical

Client: <u>ALPH</u>	Work Order: <u>11536</u>
Shipping Company: <u>UPS</u>	Date/Time Received: <u>18OCT17 1020</u>

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?			<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		<input checked="" type="checkbox"/>	
Samples < 2x background?		<input checked="" type="checkbox"/>	

\* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			<input checked="" type="checkbox"/>

Air Witness: \_\_\_\_\_

#	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken    damaged container    leaking container    other(describe)
2	Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>			
3	Samples requiring cold preservation within 0-6°C?	<input checked="" type="checkbox"/>			Preservation Method: ice bags    blue ice    dry ice    none    other (describe) <u>5.6° - 4.9 = 0.7°C</u>
4	Aqueous samples found to have visible solids?		<input checked="" type="checkbox"/>		Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample IDs, containers affected and pH observed:  If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?		<input checked="" type="checkbox"/>		Sample IDs, containers affected:  If preservative added, Lot#:
7	Samples received within holding time?	<input checked="" type="checkbox"/>			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			List type and number of containers / Sample IDs, containers affected:
11	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments:

Checklist performed by: Initials: CF      Date: 18OCT17

# **High Resolution Dioxins and Furans Analysis**

# Case Narrative

**HDOX Case Narrative**  
**Alpha Analytical Laboratory (ALPH)**  
**SDG L1736485**  
**Work Order 11536**

**Method/Analysis Information**

**Product:** Dioxins/Furans by EPA Method 1613B in Solids  
**Analytical Method:** EPA Method 1613B  
**Extraction Method:** SW846 3540C  
**Analytical Batch Number:** 36065, 36101  
**Clean Up Batch Number:** 36064, 36100  
**Extraction Batch Number:** 36063, 36099

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in Method 1613B:

<b>Sample ID</b>	<b>Client ID</b>
11536001	VC-IRB-14-ALT-S1
11536002	VC-IRB-14-ALT-S2
11536003	VC-IRB-15-ALT-S1
11536004	VC-IRB-15-ALT-S2
12019905	Method Blank (MB)
12019906	Laboratory Control Sample (LCS)
12019907	Laboratory Control Sample Duplicate (LCSD)
12019934	Method Blank (MB)
12019935	Laboratory Control Sample (LCS)
12019936	Laboratory Control Sample Duplicate (LCSD)
12019939	11536003(VC-IRB-15-ALT-S1) Matrix Spike (MS)
12019940	11536003(VC-IRB-15-ALT-S1) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

## **Calibration Information**

### **Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

## **Quality Control (QC) Information**

### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

### **Surrogate Recoveries**

All surrogate recoveries were within the established acceptance criteria for this SDG.

### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

### **QC Sample Designation**

Sample 11536003 (VC-IRB-15-ALT-S1)- Batch 36101 was selected for analysis as the matrix spike and matrix spike duplicate.

### **Matrix Spike (MS) Recovery Statement**

The MS recoveries were within the established acceptance limits.

### **MS/MSD Relative Percent Difference (RPD) Statement**

The RPDs between the MS and MSD met the acceptance limits.

### **Matrix Spike Duplicate (MSD) Recovery Statement**

The MSD recoveries were within the established acceptance limits.

## **Technical Information**

### **Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and



time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

### **Sample Dilutions**

The samples in this SDG did not require dilutions.

### **Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

### **Miscellaneous Information**

#### **Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

#### **Manual Integrations**

Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

#### **Sample preparation**

No difficulties were encountered during sample preparation.

### **Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary

## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Qualifier Definition Report for

ALPH001 Alpha Analytical Laboratory

Client SDG: L1736485 CFA Work Order: 11536

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the specified detection limit.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 14 NOV 2017

Title: Group Leader

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536001	<b>Date Collected:</b> 10/09/2017 17:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.6
<b>Client ID:</b> VC-IRB-14-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 09:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-12		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 12.17 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.997	pg/g	0.997
40321-76-4	1,2,3,7,8-PeCDD	U	4.98	pg/g	4.98
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.98	pg/g	4.98
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.98	pg/g	4.98
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.98	pg/g	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	4.98	pg/g	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD		48.2	pg/g	9.97
51207-31-9	2,3,7,8-TCDF	U	0.997	pg/g	0.997
57117-41-6	1,2,3,7,8-PeCDF	U	4.98	pg/g	4.98
57117-31-4	2,3,4,7,8-PeCDF	U	4.98	pg/g	4.98
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.98	pg/g	4.98
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.98	pg/g	4.98
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.98	pg/g	4.98
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.98	pg/g	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.98	pg/g	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.98	pg/g	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.97	pg/g	9.97
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	0.997	pg/g	0.997
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.98	pg/g	4.98
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	4.98	pg/g	4.98
37871-00-4	Total Heptachlorodibenzo-p-dioxin		7.43	pg/g	4.98
30402-14-3	Total Tetrachlorodibenzofuran	U	0.997	pg/g	0.997
30402-15-4	Total Pentachlorodibenzofuran	U	4.98	pg/g	4.98
55684-94-1	Total Hexachlorodibenzofuran	U	4.98	pg/g	4.98
38998-75-3	Total Heptachlorodibenzofuran	U	4.98	pg/g	4.98
3333-30-0	TEQ WHO2005 ND=0		0.0145	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.70	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		139	199	pg/g	69.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		176	199	pg/g	88.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		157	199	pg/g	78.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	199	pg/g	85.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		164	199	pg/g	82.2	(23%-140%)
13C-OCDD		311	399	pg/g	77.9	(17%-157%)
13C-2,3,7,8-TCDF		123	199	pg/g	61.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		167	199	pg/g	84.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		175	199	pg/g	88.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		150	199	pg/g	75.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		161	199	pg/g	80.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		156	199	pg/g	78.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		162	199	pg/g	81.0	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536001	<b>Date Collected:</b> 10/09/2017 17:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.6
<b>Client ID:</b> VC-IRB-14-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 09:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-12		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 12.17 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			157	199	pg/g	78.8 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			158	199	pg/g	79.3 (26%-138%)
37Cl-2,3,7,8-TCDD			14.6	19.9	pg/g	73.0 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536002	<b>Date Collected:</b> 10/09/2017 17:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 31
<b>Client ID:</b> VC-IRB-14-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 09:59	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 14.5 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.999	pg/g	0.999
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		6.15	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		78.7	pg/g	9.99
51207-31-9	2,3,7,8-TCDF	U	0.999	pg/g	0.999
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.99	pg/g	9.99
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	0.999	pg/g	0.999
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin		7.15	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin		23.5	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	0.999	pg/g	0.999
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.0851	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.76	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		114	200	pg/g	57.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		154	200	pg/g	77.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		140	200	pg/g	69.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		158	200	pg/g	79.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		145	200	pg/g	72.6	(23%-140%)
13C-OCDD		299	400	pg/g	74.8	(17%-157%)
13C-2,3,7,8-TCDF		101	200	pg/g	50.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		141	200	pg/g	70.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		154	200	pg/g	77.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		137	200	pg/g	68.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	200	pg/g	71.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		146	200	pg/g	73.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		146	200	pg/g	73.1	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536002	<b>Date Collected:</b> 10/09/2017 17:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 31
<b>Client ID:</b> VC-IRB-14-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/04/2017 09:59	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B_2-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 14.5 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			144	200	pg/g 72.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			144	200	pg/g 72.2	(26%-138%)
37Cl-2,3,7,8-TCDD			13.2	20.0	pg/g 66.1	(35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 17:59	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 12.49 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.983	pg/g	0.983
40321-76-4	1,2,3,7,8-PeCDD	U	4.92	pg/g	4.92
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.92	pg/g	4.92
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.92	pg/g	4.92
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.92	pg/g	4.92
35822-46-9	1,2,3,4,6,7,8-HpCDD		5.15	pg/g	4.92
3268-87-9	1,2,3,4,6,7,8,9-OCDD		85.5	pg/g	9.83
51207-31-9	2,3,7,8-TCDF	U	0.983	pg/g	0.983
57117-41-6	1,2,3,7,8-PeCDF	U	4.92	pg/g	4.92
57117-31-4	2,3,4,7,8-PeCDF	U	4.92	pg/g	4.92
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.92	pg/g	4.92
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.92	pg/g	4.92
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.92	pg/g	4.92
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.92	pg/g	4.92
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.92	pg/g	4.92
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.92	pg/g	4.92
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.83	pg/g	9.83
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	0.983	pg/g	0.983
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.92	pg/g	4.92
34465-46-8	Total Hexachlorodibenzo-p-dioxin		6.13	pg/g	4.92
37871-00-4	Total Heptachlorodibenzo-p-dioxin		19.8	pg/g	4.92
30402-14-3	Total Tetrachlorodibenzofuran	U	0.983	pg/g	0.983
30402-15-4	Total Pentachlorodibenzofuran	U	4.92	pg/g	4.92
55684-94-1	Total Hexachlorodibenzofuran	U	4.92	pg/g	4.92
38998-75-3	Total Heptachlorodibenzofuran	U	4.92	pg/g	4.92
3333-30-0	TEQ WHO2005 ND=0		0.0772	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.66	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		145	197	pg/g	73.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		194	197	pg/g	98.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	197	pg/g	82.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		168	197	pg/g	85.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		169	197	pg/g	85.8	(23%-140%)
13C-OCDD		322	393	pg/g	81.9	(17%-157%)
13C-2,3,7,8-TCDF		145	197	pg/g	73.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		180	197	pg/g	91.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		196	197	pg/g	99.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		155	197	pg/g	78.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		161	197	pg/g	81.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		165	197	pg/g	84.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		163	197	pg/g	82.9	(29%-147%)



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 17:59	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 12.49 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			168	197	pg/g	85.4 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			170	197	pg/g	86.2 (26%-138%)
37Cl-2,3,7,8-TCDD			15.7	19.7	pg/g	80.0 (35%-197%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 20:20	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 14.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.998	pg/g	0.998
40321-76-4	1,2,3,7,8-PeCDD	U	4.99	pg/g	4.99
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.99	pg/g	4.99
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.99	pg/g	4.99
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.99	pg/g	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	4.99	pg/g	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		64.9	pg/g	9.98
51207-31-9	2,3,7,8-TCDF	U	0.998	pg/g	0.998
57117-41-6	1,2,3,7,8-PeCDF	U	4.99	pg/g	4.99
57117-31-4	2,3,4,7,8-PeCDF	U	4.99	pg/g	4.99
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.99	pg/g	4.99
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.99	pg/g	4.99
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.99	pg/g	4.99
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.99	pg/g	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.99	pg/g	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.99	pg/g	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.98	pg/g	9.98
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	0.998	pg/g	0.998
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.99	pg/g	4.99
34465-46-8	Total Hexachlorodibenzo-p-dioxin		8.05	pg/g	4.99
37871-00-4	Total Heptachlorodibenzo-p-dioxin		14.2	pg/g	4.99
30402-14-3	Total Tetrachlorodibenzofuran	U	0.998	pg/g	0.998
30402-15-4	Total Pentachlorodibenzofuran	U	4.99	pg/g	4.99
55684-94-1	Total Hexachlorodibenzofuran	U	4.99	pg/g	4.99
38998-75-3	Total Heptachlorodibenzofuran	U	4.99	pg/g	4.99
3333-30-0	TEQ WHO2005 ND=0		0.0195	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.71	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	200	pg/g	84.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		202	200	pg/g	101	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		170	200	pg/g	85.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		179	200	pg/g	89.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		190	200	pg/g	95.3	(23%-140%)
13C-OCDD		372	399	pg/g	93.3	(17%-157%)
13C-2,3,7,8-TCDF		166	200	pg/g	83.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		194	200	pg/g	97.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		204	200	pg/g	102	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		166	200	pg/g	83.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		169	200	pg/g	84.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		172	200	pg/g	86.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		176	200	pg/g	88.2	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 20:20	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 14.36 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			177	200	pg/g	88.6 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			185	200	pg/g	92.5 (26%-138%)
37Cl-2,3,7,8-TCDD			16.5	20.0	pg/g	82.8 (35%-197%)

**Comments:**  
U Analyte was analyzed for, but not detected above the specified detection limit.

# Quality Control Summary

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019906	LCS for batch 36063	13C-2,3,7,8-TCDD		77.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		83.5	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		89.6	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		82.5	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		85.9	(22%-166%)
		13C-OCDD		78.1	(13%-199%)
		13C-2,3,7,8-TCDF		71.5	(22%-152%)
		13C-1,2,3,7,8-PeCDF		78.8	(21%-192%)
		13C-2,3,4,7,8-PeCDF		80.7	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		83.5	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		78.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		81.4	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.7	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		78.6	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		82.3	(20%-186%)
		37Cl-2,3,7,8-TCDD		78.5	(31%-191%)
12019907	LCSD for batch 36063	13C-2,3,7,8-TCDD		80.2	(20%-175%)
		13C-1,2,3,7,8-PeCDD		86.6	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		94.9	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		87.8	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		90.5	(22%-166%)
		13C-OCDD		81.9	(13%-199%)
		13C-2,3,7,8-TCDF		76.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		82.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		85.9	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		89.0	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		81.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		87.1	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		85.7	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		84.3	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		83.5	(20%-186%)
		37Cl-2,3,7,8-TCDD		83.7	(31%-191%)
12019905	MB for batch 36063	13C-2,3,7,8-TCDD		74.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		89.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.9	(23%-140%)
		13C-OCDD		78.4	(17%-157%)
		13C-2,3,7,8-TCDF		69.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		73.5	(35%-197%)
11536001	VC-IRB-14-ALT-S1	13C-2,3,7,8-TCDD		69.6	(25%-164%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11536001	VC-IRB-14-ALT-S1	13C-1,2,3,7,8-PeCDD		88.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.2	(23%-140%)
		13C-OCDD		77.9	(17%-157%)
		13C-2,3,7,8-TCDF		61.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		84.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		88.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		80.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		78.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		79.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		73.0	(35%-197%)
11536002	VC-IRB-14-ALT-S2	13C-2,3,7,8-TCDD		57.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		77.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		69.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		72.6	(23%-140%)
		13C-OCDD		74.8	(17%-157%)
		13C-2,3,7,8-TCDF		50.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		70.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		77.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		68.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		71.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		73.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		73.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		72.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		72.2	(26%-138%)
37Cl-2,3,7,8-TCDD		66.1	(35%-197%)		
12019935	LCS for batch 36099	13C-2,3,7,8-TCDD		79.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		97.1	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		90.2	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		89.6	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		91.5	(22%-166%)
		13C-OCDD		86.5	(13%-199%)
		13C-2,3,7,8-TCDF		79.8	(22%-152%)
		13C-1,2,3,7,8-PeCDF		94.5	(21%-192%)
		13C-2,3,4,7,8-PeCDF		96.3	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		84.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		85.8	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		87.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		89.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		88.7	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		89.2	(20%-186%)
37Cl-2,3,7,8-TCDD		81.3	(31%-191%)		
12019936	LCSD for batch 36099	13C-2,3,7,8-TCDD		80.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		99.6	(21%-227%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019936	LCSD for batch 36099	13C-1,2,3,4,7,8-HxCDD		87.1	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		92.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		96.0	(22%-166%)
		13C-OCDD		95.9	(13%-199%)
		13C-2,3,7,8-TCDF		78.3	(22%-152%)
		13C-1,2,3,7,8-PeCDF		95.0	(21%-192%)
		13C-2,3,4,7,8-PeCDF		100	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		85.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		83.8	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		88.5	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		88.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		91.4	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		94.3	(20%-186%)
		37Cl-2,3,7,8-TCDD		80.8	(31%-191%)
		12019934	MB for batch 36099	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				95.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				85.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				84.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				91.3	(23%-140%)
13C-OCDD				85.6	(17%-157%)
13C-2,3,7,8-TCDF				77.3	(24%-169%)
13C-1,2,3,7,8-PeCDF				92.0	(24%-185%)
13C-2,3,4,7,8-PeCDF				97.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				80.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				83.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				84.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				86.7	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				86.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				88.3	(26%-138%)
37Cl-2,3,7,8-TCDD		79.0	(35%-197%)		
11536003	VC-IRB-15-ALT-S1	13C-2,3,7,8-TCDD		73.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		98.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.5	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.8	(23%-140%)
		13C-OCDD		81.9	(17%-157%)
		13C-2,3,7,8-TCDF		73.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		99.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		84.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		82.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		85.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		86.2	(26%-138%)
37Cl-2,3,7,8-TCDD		80.0	(35%-197%)		
12019939	VC-IRB-15-ALT-S1(11536003MS)	13C-2,3,7,8-TCDD		82.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		105	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		90.1	(32%-141%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019939	VC-IRB-15-ALT-S1(11536003MS)	13C-1,2,3,6,7,8-HxCDD		96.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		97.9	(23%-140%)
		13C-OCDD		94.6	(17%-157%)
		13C-2,3,7,8-TCDF		81.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		99.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		106	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		86.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		89.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		89.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		90.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		92.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		91.2	(35%-197%)
		12019940	VC-IRB-15-ALT-S1(11536003MSD)	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				102	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				83.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				94.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				94.7	(23%-140%)
13C-OCDD				95.7	(17%-157%)
13C-2,3,7,8-TCDF				85.1	(24%-169%)
13C-1,2,3,7,8-PeCDF				98.5	(24%-185%)
13C-2,3,4,7,8-PeCDF				107	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				86.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				87.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				87.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				89.5	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				91.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		91.1	(26%-138%)		
37Cl-2,3,7,8-TCDD		86.3	(35%-197%)		
11536004	VC-IRB-15-ALT-S2	13C-2,3,7,8-TCDD		84.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		101	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		89.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		95.3	(23%-140%)
		13C-OCDD		93.3	(17%-157%)
		13C-2,3,7,8-TCDF		83.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		97.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		102	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		84.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		86.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		88.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		88.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		92.5	(26%-138%)		
37Cl-2,3,7,8-TCDD		82.8	(35%-197%)		

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted



**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1736485  
**Client ID:** LCS for batch 36063  
**Lab Sample ID:** 12019906  
**Instrument:** HRP750  
**Analyst:** MJC

**Sample Type:** Laboratory Control Sample  
**Matrix:** SOIL  
**Analysis Date:** 11/03/2017 13:30  
**Prep Batch ID:**  
**Batch ID:** 36065  
**Dilution:** 1

CAS No.	Parmname	Amount	Spike	Recovery Acceptance	
		Added	Conc.	%	Limits
		pg/g	pg/g		
1746-01-6	LCS 2,3,7,8-TCDD	20.0	20.8	104	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	100	106	106	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	100	102	102	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	100	103	103	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	100	103	103	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	100	105	105	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	200	207	103	78-144
51207-31-9	LCS 2,3,7,8-TCDF	20.0	19.4	96.8	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	100	104	104	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	100	104	104	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	100	106	106	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	100	104	104	84-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	100	105	105	70-156
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	100	102	102	78-130
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	100	105	105	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	100	100	100	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	200	201	100	63-170

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: L1736485      Sample Type: Laboratory Control Sample Duplicate  
 Client ID: LCSD for batch 36063      Matrix: SOIL  
 Lab Sample ID: 12019907  
 Instrument: HRP750      Analysis Date: 11/03/2017 14:17      Dilution: 1  
 Analyst: MJC      Prep Batch ID: 36063  
 Batch ID: 36065

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	20.0	20.9	104	67-158	0.442	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	100	108	108	70-142	2.09	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	100	102	102	70-164	0.0668	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	100	103	103	76-134	0.726	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	100	102	102	64-162	0.553	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	100	102	102	70-140	2.34	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	200	207	104	78-144	0.356	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	20.0	19.1	95.7	75-158	1.18	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	100	103	103	80-134	0.975	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	100	103	103	68-160	0.392	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	100	104	104	72-134	2.12	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	100	108	108	84-130	4.19	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HxCDF	100	103	103	70-156	1.68	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	100	102	102	78-130	0.286	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	100	103	103	82-122	1.59	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	100	104	104	78-138	4.07	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	200	203	101	63-170	1.09	0-20

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

<b>SDG Number:</b> L1736485	<b>Sample Type:</b> Laboratory Control Sample
<b>Client ID:</b> LCS for batch 36099	<b>Matrix:</b> SOIL
<b>Lab Sample ID:</b> 12019935	
<b>Instrument:</b> HRP750	<b>Analysis Date:</b> 11/07/2017 15:39
<b>Analyst:</b> MJC	<b>Dilution:</b> 1
	<b>Prep Batch ID:</b> 36099
	<b>Batch ID:</b> 36101

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	20.0	22.4	112	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	100	104	104	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	100	102	102	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	100	104	104	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	100	100	100	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	100	104	104	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	200	208	104	78-144
51207-31-9	LCS 2,3,7,8-TCDF	20.0	19.6	98.2	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	100	103	103	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	100	105	105	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	100	106	106	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	100	110	110	84-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	100	105	105	70-156
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	100	105	105	78-130
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	100	102	102	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	100	101	101	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	200	206	103	63-170

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1736485      **Sample Type:** Laboratory Control Sample Duplicate  
**Client ID:** LCSD for batch 36099      **Matrix:** SOIL  
**Lab Sample ID:** 12019936  
**Instrument:** HRP750      **Analysis Date:** 11/07/2017 16:25      **Dilution:** 1  
**Analyst:** MJC      **Prep Batch ID:**  
**Batch ID:** 36101

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	20.0	21.8	109	67-158	2.57	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	100	107	107	70-142	2.59	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	100	108	108	70-164	5.51	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	100	99.9	99.9	76-134	4.26	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	100	104	104	64-162	2.99	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	100	105	105	70-140	0.852	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	200	208	104	78-144	0.0393	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	20.0	19.7	98.4	75-158	0.204	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	100	103	103	80-134	0.0272	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	100	105	105	68-160	0.416	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	100	106	106	72-134	0.455	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	100	114	114	84-130	3.84	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HxCDF	100	105	105	70-156	0.139	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	100	106	106	78-130	1.68	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	100	102	102	82-122	0.310	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	100	99.9	99.9	78-138	1.01	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	200	208	104	63-170	0.970	0-20

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

<b>SDG Number:</b> L1736485	<b>Sample Type:</b> Matrix Spike
<b>Client ID:</b> VC-IRB-15-ALT-S1(11536003MS)	<b>Matrix:</b> SOIL
<b>Lab Sample ID:</b> 12019939	<b>%Moisture:</b> 18.6
<b>Instrument:</b> HRP750	<b>Analysis Date:</b> 11/07/2017 18:46
<b>Analyst:</b> MJC	<b>Dilution:</b> 1
	<b>Prep Batch ID:</b> 36099
	<b>Batch ID:</b> 36101

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	
1746-01-6	MS 2,3,7,8-TCDD	19.7	U	20.9	106	70-130
40321-76-4	MS 1,2,3,7,8-PeCDD	98.6	U	105	106	70-130
39227-28-6	MS 1,2,3,4,7,8-HxCDD	98.6	U	102	103	70-130
57653-85-7	MS 1,2,3,6,7,8-HxCDD	98.6	U	103	104	70-130
19408-74-3	MS 1,2,3,7,8,9-HxCDD	98.6	U	101	102	70-130
35822-46-9	MS 1,2,3,4,6,7,8-HpCDD	98.6		109	106	70-130
3268-87-9	MS 1,2,3,4,6,7,8,9-OCDD	197		288	103	70-130
51207-31-9	MS 2,3,7,8-TCDF	19.7	U	19.6	99.4	70-130
57117-41-6	MS 1,2,3,7,8-PeCDF	98.6	U	102	104	70-130
57117-31-4	MS 2,3,4,7,8-PeCDF	98.6	U	102	104	70-130
70648-26-9	MS 1,2,3,4,7,8-HxCDF	98.6	U	105	107	70-130
57117-44-9	MS 1,2,3,6,7,8-HxCDF	98.6	U	107	108	70-130
60851-34-5	MS 2,3,4,6,7,8-HxCDF	98.6	U	107	108	70-130
72918-21-9	MS 1,2,3,7,8,9-HxCDF	98.6	U	104	106	70-130
67562-39-4	MS 1,2,3,4,6,7,8-HpCDF	98.6	U	101	102	70-130
55673-89-7	MS 1,2,3,4,7,8,9-HpCDF	98.6	U	102	103	70-130
39001-02-0	MS 1,2,3,4,6,7,8,9-OCDF	197	U	209	106	70-130

Hi-Res Dioxins/Furans  
Quality Control Summary  
Spike Recovery Report

<b>SDG Number:</b> L1736485	<b>Sample Type:</b> Matrix Spike Duplicate
<b>Client ID:</b> VC-IRB-15-ALT-S1(11536003MSD)	<b>Matrix:</b> SOIL
<b>Lab Sample ID:</b> 12019940	<b>%Moisture:</b> 18.6
<b>Instrument:</b> HRP750	<b>Analysis Date:</b> 11/07/2017 19:33
<b>Analyst:</b> MJC	<b>Dilution:</b> 1
	<b>Prep Batch ID:</b> 36099
	<b>Batch ID:</b> 36101

CAS No.	Parmname	Amount Added		Spike Conc.	Recovery %	Acceptance Limits	RPD %	Acceptance Limits	
		pg/g	U						
1746-01-6	MSD	2,3,7,8-TCDD	19.7	U	20.6	105	70-130	1.81	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	98.4	U	106	107	70-130	1.18	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	98.4	U	107	109	70-130	5.16	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	98.4	U	99.5	101	70-130	3.23	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	98.4	U	103	104	70-130	1.99	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	98.4		107	104	70-130	1.95	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	197		292	105	70-130	1.39	0-20
51207-31-9	MSD	2,3,7,8-TCDF	19.7	U	18.7	94.9	70-130	4.86	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	98.4	U	101	103	70-130	0.690	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	98.4	U	102	104	70-130	0.393	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	98.4	U	103	104	70-130	2.37	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	98.4	U	106	107	70-130	1.23	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	98.4	U	104	105	70-130	3.27	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	98.4	U	99.1	101	70-130	5.23	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	98.4	U	101	103	70-130	0.588	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	98.4	U	102	104	70-130	0.614	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	197	U	203	103	70-130	2.78	0-20

## Method Blank Summary

Page 1 of 1

SDG Number: L1736485  
Client ID: MB for batch 36063  
Lab Sample ID: 12019905  
Column:

Client: ALPH001  
Instrument ID: HRP750  
Prep Date: 01-NOV-17

Matrix: SOIL  
Data File: A03NOV17B-4  
Analyzed: 11/03/17 15:04

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 36063	12019906	A03NOV17B-2	11/03/17	1330
02 LCSD for batch 36063	12019907	A03NOV17B-3	11/03/17	1417
03 VC-IRB-14-ALT-S1	11536001	A03NOV17B_2-12	11/04/17	0912
04 VC-IRB-14-ALT-S2	11536002	A03NOV17B_2-13	11/04/17	0959

## Method Blank Summary

Page 1 of 1

SDG Number: L1736485  
Client ID: MB for batch 36099  
Lab Sample ID: 12019934  
Column:

Client: ALPH001  
Instrument ID: HRP750  
Prep Date: 04-NOV-17

Matrix: SOIL  
Data File: A06NOV17B\_4-3  
Analyzed: 11/07/17 17:12

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 36099	12019935	A06NOV17B_4-1	11/07/17	1539
02 LCSD for batch 36099	12019936	A06NOV17B_4-2	11/07/17	1625
03 VC-IRB-15-ALT-S1	11536003	A06NOV17B_4-4	11/07/17	1759
04 VC-IRB-15-ALT-S1(11536003MS)	12019939	A06NOV17B_4-5	11/07/17	1846
05 VC-IRB-15-ALT-S1(11536003MSD)	12019940	A06NOV17B_4-6	11/07/17	1933
06 VC-IRB-15-ALT-S2	11536004	A06NOV17B_4-7	11/07/17	2020



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019905		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36063		
<b>Client ID:</b> MB for batch 36063		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 15:04	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	5	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	10	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	5	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	5	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	1	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.70	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		149	200	pg/g	74.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		172	200	pg/g	86.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		180	200	pg/g	89.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		169	200	pg/g	84.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		174	200	pg/g	86.9	(23%-140%)
13C-OCDD		314	400	pg/g	78.4	(17%-157%)
13C-2,3,7,8-TCDF		140	200	pg/g	69.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		163	200	pg/g	81.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		170	200	pg/g	84.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		169	200	pg/g	84.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		165	200	pg/g	82.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		167	200	pg/g	83.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		166	200	pg/g	83.0	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019905		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36063		
<b>Client ID:</b> MB for batch 36063		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 15:04	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			166	200	pg/g	82.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			163	200	pg/g	81.3 (26%-138%)
37Cl-2,3,7,8-TCDD			14.7	20.0	pg/g	73.5 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019906		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36063		
<b>Client ID:</b> LCS for batch 36063		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 13:30	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		20.8	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		106	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		103	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		105	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		207	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		19.4	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		104	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		104	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		106	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		104	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		102	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		105	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		100	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		201	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		154	200	pg/g	77.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		167	200	pg/g	83.5	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		179	200	pg/g	89.6	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		165	200	pg/g	82.5	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		172	200	pg/g	85.9	(22%-166%)
13C-OCDD		312	400	pg/g	78.1	(13%-199%)
13C-2,3,7,8-TCDF		143	200	pg/g	71.5	(22%-152%)
13C-1,2,3,7,8-PeCDF		158	200	pg/g	78.8	(21%-192%)
13C-2,3,4,7,8-PeCDF		161	200	pg/g	80.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		167	200	pg/g	83.5	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		157	200	pg/g	78.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		163	200	pg/g	81.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		161	200	pg/g	80.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		157	200	pg/g	78.6	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		165	200	pg/g	82.3	(20%-186%)
37Cl-2,3,7,8-TCDD		15.7	20.0	pg/g	78.5	(31%-191%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019907		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36063		
<b>Client ID:</b> LCSD for batch 36063		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36065	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/03/2017 14:17	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A03NOV17B-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36063	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 01-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		20.9	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		108	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		102	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		102	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		207	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		19.1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		103	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		104	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		108	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		103	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		102	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		103	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		104	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		203	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		160	200	pg/g	80.2	(20%-175%)
13C-1,2,3,7,8-PeCDD		173	200	pg/g	86.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		190	200	pg/g	94.9	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		176	200	pg/g	87.8	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		181	200	pg/g	90.5	(22%-166%)
13C-OCDD		328	400	pg/g	81.9	(13%-199%)
13C-2,3,7,8-TCDF		152	200	pg/g	76.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		164	200	pg/g	82.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		172	200	pg/g	85.9	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		178	200	pg/g	89.0	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		164	200	pg/g	81.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		174	200	pg/g	87.1	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		171	200	pg/g	85.7	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		169	200	pg/g	84.3	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		167	200	pg/g	83.5	(20%-186%)
37Cl-2,3,7,8-TCDD		16.7	20.0	pg/g	83.7	(31%-191%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019934		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099		
<b>Client ID:</b> MB for batch 36099		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 17:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	5	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	10	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	5	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	5	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	1	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.70	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		155	200	pg/g	77.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		191	200	pg/g	95.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		171	200	pg/g	85.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		169	200	pg/g	84.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		183	200	pg/g	91.3	(23%-140%)
13C-OCDD		342	400	pg/g	85.6	(17%-157%)
13C-2,3,7,8-TCDF		155	200	pg/g	77.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		184	200	pg/g	92.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		195	200	pg/g	97.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		160	200	pg/g	80.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		166	200	pg/g	83.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		169	200	pg/g	84.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		173	200	pg/g	86.7	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019934		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099		
<b>Client ID:</b> MB for batch 36099		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 17:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			173	200	pg/g	86.6 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			177	200	pg/g	88.3 (26%-138%)
37Cl-2,3,7,8-TCDD			15.8	20.0	pg/g	79.0 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019935		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099		
<b>Client ID:</b> LCS for batch 36099		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 15:39	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-1		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		22.4	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		104	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		104	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		100	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		104	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		208	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		19.6	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		105	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		106	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		110	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		102	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		101	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		206	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		158	200	pg/g	79.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		194	200	pg/g	97.1	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		180	200	pg/g	90.2	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		179	200	pg/g	89.6	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		183	200	pg/g	91.5	(22%-166%)
13C-OCDD		346	400	pg/g	86.5	(13%-199%)
13C-2,3,7,8-TCDF		160	200	pg/g	79.8	(22%-152%)
13C-1,2,3,7,8-PeCDF		189	200	pg/g	94.5	(21%-192%)
13C-2,3,4,7,8-PeCDF		193	200	pg/g	96.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		170	200	pg/g	84.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		172	200	pg/g	85.8	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		176	200	pg/g	87.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		179	200	pg/g	89.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		177	200	pg/g	88.7	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		178	200	pg/g	89.2	(20%-186%)
37Cl-2,3,7,8-TCDD		16.3	20.0	pg/g	81.3	(31%-191%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
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Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019936		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099		
<b>Client ID:</b> LCSD for batch 36099		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 16:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		21.8	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		107	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		108	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		99.9	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		104	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		105	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		208	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		19.7	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		105	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		106	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		114	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		106	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		102	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		99.9	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		208	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		160	200	pg/g	80.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		199	200	pg/g	99.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		174	200	pg/g	87.1	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		185	200	pg/g	92.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		192	200	pg/g	96.0	(22%-166%)
13C-OCDD		384	400	pg/g	95.9	(13%-199%)
13C-2,3,7,8-TCDF		157	200	pg/g	78.3	(22%-152%)
13C-1,2,3,7,8-PeCDF		190	200	pg/g	95.0	(21%-192%)
13C-2,3,4,7,8-PeCDF		200	200	pg/g	100	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		172	200	pg/g	85.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		168	200	pg/g	83.8	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		177	200	pg/g	88.5	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		177	200	pg/g	88.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		183	200	pg/g	91.4	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		189	200	pg/g	94.3	(20%-186%)
37Cl-2,3,7,8-TCDD		16.2	20.0	pg/g	80.8	(31%-191%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019939	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1(11536003MS)		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 18:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 12.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		20.9	pg/g	0.986
40321-76-4	1,2,3,7,8-PeCDD		105	pg/g	4.93
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	4.93
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	4.93
19408-74-3	1,2,3,7,8,9-HxCDD		101	pg/g	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD		109	pg/g	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD		288	pg/g	9.86
51207-31-9	2,3,7,8-TCDF		19.6	pg/g	0.986
57117-41-6	1,2,3,7,8-PeCDF		102	pg/g	4.93
57117-31-4	2,3,4,7,8-PeCDF		102	pg/g	4.93
70648-26-9	1,2,3,4,7,8-HxCDF		105	pg/g	4.93
57117-44-9	1,2,3,6,7,8-HxCDF		107	pg/g	4.93
60851-34-5	2,3,4,6,7,8-HxCDF		107	pg/g	4.93
72918-21-9	1,2,3,7,8,9-HxCDF		104	pg/g	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF		101	pg/g	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF		102	pg/g	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF		209	pg/g	9.86

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		164	197	pg/g	82.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		207	197	pg/g	105	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		178	197	pg/g	90.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		190	197	pg/g	96.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		193	197	pg/g	97.9	(23%-140%)
13C-OCDD		373	395	pg/g	94.6	(17%-157%)
13C-2,3,7,8-TCDF		161	197	pg/g	81.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		197	197	pg/g	99.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		209	197	pg/g	106	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		170	197	pg/g	86.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		177	197	pg/g	89.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		176	197	pg/g	89.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		178	197	pg/g	90.4	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		183	197	pg/g	92.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		188	197	pg/g	95.1	(26%-138%)
37Cl-2,3,7,8-TCDD		18.0	19.7	pg/g	91.2	(35%-197%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019940	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1(11536003MSD)		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 19:33	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 12.48 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		20.6	pg/g	0.984
40321-76-4	1,2,3,7,8-PeCDD		106	pg/g	4.92
39227-28-6	1,2,3,4,7,8-HxCDD		107	pg/g	4.92
57653-85-7	1,2,3,6,7,8-HxCDD		99.5	pg/g	4.92
19408-74-3	1,2,3,7,8,9-HxCDD		103	pg/g	4.92
35822-46-9	1,2,3,4,6,7,8-HpCDD		107	pg/g	4.92
3268-87-9	1,2,3,4,6,7,8,9-OCDD		292	pg/g	9.84
51207-31-9	2,3,7,8-TCDF		18.7	pg/g	0.984
57117-41-6	1,2,3,7,8-PeCDF		101	pg/g	4.92
57117-31-4	2,3,4,7,8-PeCDF		102	pg/g	4.92
70648-26-9	1,2,3,4,7,8-HxCDF		103	pg/g	4.92
57117-44-9	1,2,3,6,7,8-HxCDF		106	pg/g	4.92
60851-34-5	2,3,4,6,7,8-HxCDF		104	pg/g	4.92
72918-21-9	1,2,3,7,8,9-HxCDF		99.1	pg/g	4.92
67562-39-4	1,2,3,4,6,7,8-HpCDF		101	pg/g	4.92
55673-89-7	1,2,3,4,7,8,9-HpCDF		102	pg/g	4.92
39001-02-0	1,2,3,4,6,7,8,9-OCDF		203	pg/g	9.84

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	197	pg/g	86.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		202	197	pg/g	102	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		165	197	pg/g	83.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		187	197	pg/g	94.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		186	197	pg/g	94.7	(23%-140%)
13C-OCDD		377	394	pg/g	95.7	(17%-157%)
13C-2,3,7,8-TCDF		167	197	pg/g	85.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		194	197	pg/g	98.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		211	197	pg/g	107	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		170	197	pg/g	86.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		171	197	pg/g	87.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		172	197	pg/g	87.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		176	197	pg/g	89.5	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		180	197	pg/g	91.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		179	197	pg/g	91.1	(26%-138%)
37Cl-2,3,7,8-TCDD		17.0	19.7	pg/g	86.3	(35%-197%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.

# **PCB Congeners Analysis**

# Case Narrative

**PCBC Case Narrative**  
**Alpha Analytical Laboratory (ALPH)**  
**SDG L1736485**  
**Work Order 11536**

**Method/Analysis Information**

**Product:** PCB Congeners by EPA Method 1668A in Solids  
**Analytical Method:** EPA Method 1668A  
**Extraction Method:** SW846 3540C  
**Analytical Batch Number:** 36009, 36080  
**Clean Up Batch Number:** 36008, 36079  
**Extraction Batch Number:** 36007, 36078

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

<b>Sample ID</b>	<b>Client ID</b>
11536001	VC-IRB-14-ALT-S1
11536002	VC-IRB-14-ALT-S2
11536003	VC-IRB-15-ALT-S1
11536004	VC-IRB-15-ALT-S2
12019858	Method Blank (MB)
12019859	Laboratory Control Sample (LCS)
12019860	Laboratory Control Sample Duplicate (LCSD)
12019920	Method Blank (MB)
12019921	Laboratory Control Sample (LCS)
12019922	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

**Calibration Information**

**Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

**Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

**Quality Control (QC) Information****Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

**Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

**Surrogate Recoveries**

Two surrogates recovered outside the acceptance limits. 12019920 (MB), 12019921 (LCS) and 12019922 (LCSD)- Batch 36080.

**Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

**Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

**LCS/LCSD Relative Percent Difference (RPD) Statement**

Three RPDs were outside the recommended acceptance limits. All individual recoveries met acceptance criteria. LCSD is not required QC for Method 1668A; data is included for informational purposes. 12019921 (LCS) and 12019922 (LCSD)- Batch 36080.

**QC Sample Designation**

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

**Technical Information****Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

**Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

**Sample Dilutions**

The samples in this SDG did not require dilutions.

**Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

**Miscellaneous Information****Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

**Manual Integrations**

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

**System Configuration**

This analysis was performed on the following instrument configuration:

<b>Instrument ID</b>	<b>Instrument</b>	<b>System Configuration</b>	<b>Column ID</b>	<b>Column Description</b>
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary



## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Qualifier Definition Report for

ALPH001 Alpha Analytical Laboratory

Client SDG: L1736485 CFA Work Order: 11536

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

**Signature:** 

**Name:** Heather Patterson

**Date:** 15 NOV 2017

**Title:** Group Leader

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536001	<b>Date Collected:</b> 10/09/2017 17:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.6
<b>Client ID:</b> VC-IRB-14-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 23:06	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.13 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2	pg/g	2.00
2051-61-8	2-MoCB	U	2	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB	U	2	pg/g	2.00
16605-91-7	5-DiCB	U	2	pg/g	2.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	2	pg/g	2.00
34883-43-7	8-DiCB	U	2	pg/g	2.00
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	2	pg/g	2.00
2050-67-1	11-DiCB	U	20	pg/g	20.0
2974-92-7	12-DiCB	CU	4	pg/g	4.00
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2	pg/g	2.00
2050-68-2	15-DiCB	U	2	pg/g	2.00
38444-78-9	16-TrCB	U	2	pg/g	2.00
37680-66-3	17-TrCB	U	2	pg/g	2.00
37680-65-2	18-TrCB	CU	4	pg/g	4.00
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	4	pg/g	4.00
55702-46-0	21-TrCB	CU	4	pg/g	4.00
38444-85-8	22-TrCB	U	2	pg/g	2.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	4	pg/g	4.00
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2	pg/g	2.00
38444-77-8	32-TrCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>Client ID:</b> VC-IRB-14-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 23:06	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_3-7		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.13 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	2	pg/g	2.00
38444-87-0	36-TrCB	U	2	pg/g	2.00
38444-90-5	37-TrCB	U	2	pg/g	2.00
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	2	pg/g	2.00
38444-93-8	40-TeCB	CU	4	pg/g	4.00
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	2	pg/g	2.00
41464-39-5	44-TeCB	CU	6	pg/g	6.00
70362-45-7	45-TeCB	CU	4	pg/g	4.00
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	4	pg/g	4.00
62796-65-0	50-TeCB	CU	4	pg/g	4.00
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	2	pg/g	2.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	6	pg/g	6.00
33025-41-1	60-TeCB	U	2	pg/g	2.00
33284-53-6	61-TeCB	CU	8	pg/g	8.00
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2	pg/g	2.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

**Comments:**

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**PCB Congeners**  
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**Sample Summary**

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<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 23:06	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_3-7		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.13 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2	pg/g	2.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2	pg/g	2.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	2	pg/g	2.00
33284-52-5	80-TeCB	U	2	pg/g	2.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	2	pg/g	2.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	6	pg/g	6.00
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4	pg/g	4.00
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	6	pg/g	6.00
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	4	pg/g	4.00
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	2	pg/g	2.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>Client ID:</b> VC-IRB-14-ALT-S1		<b>Prep Basis:</b> Dry Weight
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<b>Run Date:</b> 10/28/2017 23:06	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_3-7		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.13 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4	pg/g	4.00
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2	pg/g	2.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	2	pg/g	2.00
70362-41-3	108-PeCB	CU	4	pg/g	4.00
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4	pg/g	4.00
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2	pg/g	2.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	4	pg/g	4.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
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<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.6
<b>Client ID:</b> VC-IRB-14-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/28/2017 23:06	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_3-7		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.13 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6	pg/g	6.00
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	4	pg/g	4.00
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4	pg/g	4.00
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2	pg/g	2.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	4	pg/g	4.00
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	4	pg/g	4.00
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	4	pg/g	4.00
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b>	L1736485	<b>Client:</b>	ALPH001	<b>Project:</b>	ALPH00217
<b>Lab Sample ID:</b>	11536001	<b>Date Collected:</b>	10/09/2017 17:00	<b>Matrix:</b>	SOIL
<b>Client Sample:</b>	1613B/1668A Soil	<b>Date Received:</b>	10/18/2017 10:20	<b>%Moisture:</b>	17.6
<b>Client ID:</b>	VC-IRB-14-ALT-S1			<b>Prep Basis:</b>	Dry Weight
<b>Batch ID:</b>	36009	<b>Method:</b>	EPA Method 1668A	<b>Instrument:</b>	HRP791
<b>Run Date:</b>	10/28/2017 23:06	<b>Analyst:</b>	MLS	<b>Dilution:</b>	1
<b>Data File:</b>	c27oct17a_3-7	<b>Prep Method:</b>	SW846 3540C	<b>Prep SOP Ref:</b>	CF-OA-E-001
<b>Prep Batch:</b>	36007	<b>Prep Aliquot:</b>	12.13 g		
<b>Prep Date:</b>	25-OCT-17				

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	4	pg/g	4.00
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	4	pg/g	4.00
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	4	pg/g	4.00
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536001	<b>Date Collected:</b> 10/09/2017 17:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.6
<b>Client ID:</b> VC-IRB-14-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 23:06	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.13 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	4	pg/g	4.00
68194-17-2	198-OcCB	CU	4	pg/g	4.00
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners	U	2	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		74.1	200	pg/g	37.1	(15%-150%)
13C-3-MoCB		87.9	200	pg/g	44.0	(15%-150%)
13C-4-DiCB		93.7	200	pg/g	46.8	(25%-150%)
13C-15-DiCB		156	200	pg/g	78.1	(25%-150%)
13C-19-TrCB		134	200	pg/g	66.8	(25%-150%)
13C-37-TrCB		138	200	pg/g	68.9	(25%-150%)
13C-54-TeCB		131	200	pg/g	65.4	(25%-150%)
13C-77-TeCB		153	200	pg/g	76.7	(25%-150%)
13C-81-TeCB		133	200	pg/g	66.6	(25%-150%)
13C-104-PeCB		173	200	pg/g	86.4	(25%-150%)
13C-105-PeCB		133	200	pg/g	66.7	(25%-150%)
13C-114-PeCB		138	200	pg/g	68.9	(25%-150%)
13C-118-PeCB		141	200	pg/g	70.4	(25%-150%)
13C-123-PeCB		144	200	pg/g	72.2	(25%-150%)
13C-126-PeCB		126	200	pg/g	63.1	(25%-150%)
13C-155-HxCB		165	200	pg/g	82.7	(25%-150%)
13C-156-HxCB	C	250	400	pg/g	62.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		134	200	pg/g	66.9	(25%-150%)
13C-169-HxCB		115	200	pg/g	57.5	(25%-150%)
13C-188-HpCB		201	200	pg/g	100	(25%-150%)
13C-189-HpCB		130	200	pg/g	65.1	(25%-150%)



**PCB Congeners  
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Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536001	<b>Date Collected:</b> 10/09/2017 17:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 17.6
<b>Client ID:</b> VC-IRB-14-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/28/2017 23:06	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 12.13 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			188	200	pg/g	94.2 (25%-150%)
13C-205-OcCB			157	200	pg/g	78.7 (25%-150%)
13C-206-NoCB			179	200	pg/g	89.6 (25%-150%)
13C-208-NoCB			183	200	pg/g	91.2 (25%-150%)
13C-209-DeCB			160	200	pg/g	80.1 (25%-150%)
13C-111-PeCB			158	200	pg/g	78.9 (30%-135%)
13C-28-TrCB			130	200	pg/g	64.9 (30%-135%)
13C-178-HpCB			194	200	pg/g	97.1 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536002	<b>Date Collected:</b> 10/09/2017 17:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 31
<b>Client ID:</b> VC-IRB-14-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/29/2017 00:13	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_3-8		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 14.52 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2	pg/g	2.00
2051-61-8	2-MoCB		2.77	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB	U	2	pg/g	2.00
16605-91-7	5-DiCB	U	2	pg/g	2.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	2	pg/g	2.00
34883-43-7	8-DiCB	U	2	pg/g	2.00
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	2	pg/g	2.00
2050-67-1	11-DiCB	U	20	pg/g	20.0
2974-92-7	12-DiCB	CU	3.99	pg/g	3.99
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2	pg/g	2.00
2050-68-2	15-DiCB	U	2	pg/g	2.00
38444-78-9	16-TrCB	U	2	pg/g	2.00
37680-66-3	17-TrCB	U	2	pg/g	2.00
37680-65-2	18-TrCB	CU	3.99	pg/g	3.99
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	3.99	pg/g	3.99
55702-46-0	21-TrCB	CU	3.99	pg/g	3.99
38444-85-8	22-TrCB	U	2	pg/g	2.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	3.99	pg/g	3.99
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2	pg/g	2.00
38444-77-8	32-TrCB	U	2	pg/g	2.00

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536002	<b>Date Collected:</b> 10/09/2017 17:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 31
<b>Client ID:</b> VC-IRB-14-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/29/2017 00:13	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 14.52 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	2	pg/g	2.00
38444-87-0	36-TrCB	U	2	pg/g	2.00
38444-90-5	37-TrCB	U	2	pg/g	2.00
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	2	pg/g	2.00
38444-93-8	40-TeCB	CU	3.99	pg/g	3.99
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	2	pg/g	2.00
41464-39-5	44-TeCB	CU	5.99	pg/g	5.99
70362-45-7	45-TeCB	CU	3.99	pg/g	3.99
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	3.99	pg/g	3.99
62796-65-0	50-TeCB	CU	3.99	pg/g	3.99
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	2	pg/g	2.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	5.99	pg/g	5.99
33025-41-1	60-TeCB	U	2	pg/g	2.00
33284-53-6	61-TeCB	CU	7.98	pg/g	7.98
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2	pg/g	2.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536002	<b>Date Collected:</b> 10/09/2017 17:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 31
<b>Client ID:</b> VC-IRB-14-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/29/2017 00:13	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_3-8		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 14.52 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2	pg/g	2.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2	pg/g	2.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	2	pg/g	2.00
33284-52-5	80-TeCB	U	2	pg/g	2.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	2	pg/g	2.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	5.99	pg/g	5.99
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.99	pg/g	3.99
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	5.99	pg/g	5.99
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	3.99	pg/g	3.99
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	2	pg/g	2.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536002	<b>Date Collected:</b> 10/09/2017 17:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 31
<b>Client ID:</b> VC-IRB-14-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 10/29/2017 00:13	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c27oct17a_3-8		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 14.52 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.99	pg/g	3.99
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2	pg/g	2.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	2	pg/g	2.00
70362-41-3	108-PeCB	CU	3.99	pg/g	3.99
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.99	pg/g	3.99
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2	pg/g	2.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	3.99	pg/g	3.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536002	<b>Date Collected:</b> 10/09/2017 17:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 31
<b>Client ID:</b> VC-IRB-14-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/29/2017 00:13	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 14.52 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.99	pg/g	5.99
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	3.99	pg/g	3.99
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.99	pg/g	3.99
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2	pg/g	2.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	3.99	pg/g	3.99
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	3.99	pg/g	3.99
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	3.99	pg/g	3.99
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736485  
**Lab Sample ID:** 11536002  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-14-ALT-S2  
**Batch ID:** 36009  
**Run Date:** 10/29/2017 00:13  
**Data File:** c27oct17a\_3-8  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
**Date Collected:** 10/09/2017 17:10  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 14.52 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 31  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	3.99	pg/g	3.99
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	3.99	pg/g	3.99
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	3.99	pg/g	3.99
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536002	<b>Date Collected:</b> 10/09/2017 17:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 31
<b>Client ID:</b> VC-IRB-14-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/29/2017 00:13	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 14.52 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	3.99	pg/g	3.99
68194-17-2	198-OcCB	CU	3.99	pg/g	3.99
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners		2.77	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		40.6	200	pg/g	20.3	(15%-150%)
13C-3-MoCB		57.6	200	pg/g	28.8	(15%-150%)
13C-4-DiCB		64.0	200	pg/g	32.1	(25%-150%)
13C-15-DiCB		125	200	pg/g	62.6	(25%-150%)
13C-19-TrCB		103	200	pg/g	51.7	(25%-150%)
13C-37-TrCB		120	200	pg/g	60.1	(25%-150%)
13C-54-TeCB		104	200	pg/g	52.1	(25%-150%)
13C-77-TeCB		142	200	pg/g	71.4	(25%-150%)
13C-81-TeCB		145	200	pg/g	72.5	(25%-150%)
13C-104-PeCB		147	200	pg/g	73.5	(25%-150%)
13C-105-PeCB		123	200	pg/g	61.9	(25%-150%)
13C-114-PeCB		128	200	pg/g	64.3	(25%-150%)
13C-118-PeCB		130	200	pg/g	64.9	(25%-150%)
13C-123-PeCB		133	200	pg/g	66.8	(25%-150%)
13C-126-PeCB		117	200	pg/g	58.5	(25%-150%)
13C-155-HxCB		149	200	pg/g	74.6	(25%-150%)
13C-156-HxCB	C	234	399	pg/g	58.6	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		121	200	pg/g	60.7	(25%-150%)
13C-169-HxCB		108	200	pg/g	53.9	(25%-150%)
13C-188-HpCB		184	200	pg/g	92.3	(25%-150%)
13C-189-HpCB		121	200	pg/g	60.8	(25%-150%)



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536002	<b>Date Collected:</b> 10/09/2017 17:10	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 31
<b>Client ID:</b> VC-IRB-14-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/29/2017 00:13	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a_3-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 14.52 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			171	200	pg/g	85.5 (25%-150%)
13C-205-OcCB			148	200	pg/g	74.2 (25%-150%)
13C-206-NoCB			168	200	pg/g	84.1 (25%-150%)
13C-208-NoCB			167	200	pg/g	83.6 (25%-150%)
13C-209-DeCB			186	200	pg/g	93.3 (25%-150%)
13C-111-PeCB			177	200	pg/g	88.8 (30%-135%)
13C-28-TrCB			131	200	pg/g	65.8 (30%-135%)
13C-178-HpCB			217	200	pg/g	109 (30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/09/2017 16:29	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c09nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.99	pg/g	1.99
2051-61-8	2-MoCB	U	1.99	pg/g	1.99
2051-62-9	3-MoCB	U	1.99	pg/g	1.99
13029-08-8	4-DiCB	U	1.99	pg/g	1.99
16605-91-7	5-DiCB	U	1.99	pg/g	1.99
25569-80-6	6-DiCB	U	1.99	pg/g	1.99
33284-50-3	7-DiCB	U	1.99	pg/g	1.99
34883-43-7	8-DiCB	U	1.99	pg/g	1.99
34883-39-1	9-DiCB	U	1.99	pg/g	1.99
33146-45-1	10-DiCB	U	1.99	pg/g	1.99
2050-67-1	11-DiCB	U	19.9	pg/g	19.9
2974-92-7	12-DiCB	CU	3.97	pg/g	3.97
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.99	pg/g	1.99
2050-68-2	15-DiCB	U	1.99	pg/g	1.99
38444-78-9	16-TrCB	U	1.99	pg/g	1.99
37680-66-3	17-TrCB	U	1.99	pg/g	1.99
37680-65-2	18-TrCB	CU	3.97	pg/g	3.97
38444-73-4	19-TrCB	U	1.99	pg/g	1.99
38444-84-7	20-TrCB	CU	3.97	pg/g	3.97
55702-46-0	21-TrCB	CU	3.97	pg/g	3.97
38444-85-8	22-TrCB	U	1.99	pg/g	1.99
55720-44-0	23-TrCB	U	1.99	pg/g	1.99
55702-45-9	24-TrCB	U	1.99	pg/g	1.99
55712-37-3	25-TrCB	U	1.99	pg/g	1.99
38444-81-4	26-TrCB	CU	3.97	pg/g	3.97
38444-76-7	27-TrCB	U	1.99	pg/g	1.99
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.99	pg/g	1.99
38444-77-8	32-TrCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/09/2017 16:29	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c09nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.99	pg/g	1.99
37680-69-6	35-TrCB	U	1.99	pg/g	1.99
38444-87-0	36-TrCB	U	1.99	pg/g	1.99
38444-90-5	37-TrCB	U	1.99	pg/g	1.99
53555-66-1	38-TrCB	U	1.99	pg/g	1.99
38444-88-1	39-TrCB	U	1.99	pg/g	1.99
38444-93-8	40-TeCB	CU	3.97	pg/g	3.97
52663-59-9	41-TeCB	U	1.99	pg/g	1.99
36559-22-5	42-TeCB	U	1.99	pg/g	1.99
70362-46-8	43-TeCB	U	1.99	pg/g	1.99
41464-39-5	44-TeCB	CU	5.96	pg/g	5.96
70362-45-7	45-TeCB	CU	3.97	pg/g	3.97
41464-47-5	46-TeCB	U	1.99	pg/g	1.99
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.99	pg/g	1.99
41464-40-8	49-TeCB	CU	3.97	pg/g	3.97
62796-65-0	50-TeCB	CU	3.97	pg/g	3.97
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.99	pg/g	1.99
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.99	pg/g	1.99
74338-24-2	55-TeCB	U	1.99	pg/g	1.99
41464-43-1	56-TeCB	U	1.99	pg/g	1.99
70424-67-8	57-TeCB	U	1.99	pg/g	1.99
41464-49-7	58-TeCB	U	1.99	pg/g	1.99
74472-33-6	59-TeCB	CU	5.96	pg/g	5.96
33025-41-1	60-TeCB	U	1.99	pg/g	1.99
33284-53-6	61-TeCB	CU	7.95	pg/g	7.95
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.99	pg/g	1.99
52663-58-8	64-TeCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 16:29	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.99	pg/g	1.99
73575-53-8	67-TeCB	U	1.99	pg/g	1.99
73575-52-7	68-TeCB	U	1.99	pg/g	1.99
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.99	pg/g	1.99
74338-23-1	73-TeCB	U	1.99	pg/g	1.99
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.99	pg/g	1.99
70362-49-1	78-TeCB	U	1.99	pg/g	1.99
41464-48-6	79-TeCB	U	1.99	pg/g	1.99
33284-52-5	80-TeCB	U	1.99	pg/g	1.99
70362-50-4	81-TeCB	U	1.99	pg/g	1.99
52663-62-4	82-PeCB	U	1.99	pg/g	1.99
60145-20-2	83-PeCB	U	1.99	pg/g	1.99
52663-60-2	84-PeCB	U	1.99	pg/g	1.99
65510-45-4	85-PeCB	CU	5.96	pg/g	5.96
55312-69-1	86-PeCB	CU	11.9	pg/g	11.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.97	pg/g	3.97
73575-57-2	89-PeCB	U	1.99	pg/g	1.99
68194-07-0	90-PeCB	CU	5.96	pg/g	5.96
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.99	pg/g	1.99
73575-56-1	93-PeCB	CU	3.97	pg/g	3.97
73575-55-0	94-PeCB	U	1.99	pg/g	1.99
38379-99-6	95-PeCB	U	1.99	pg/g	1.99
73575-54-9	96-PeCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/09/2017 16:29	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c09nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.97	pg/g	3.97
38380-01-7	99-PeCB	U	1.99	pg/g	1.99
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.99	pg/g	1.99
56558-16-8	104-PeCB	U	1.99	pg/g	1.99
32598-14-4	105-PeCB	U	1.99	pg/g	1.99
70424-69-0	106-PeCB	U	1.99	pg/g	1.99
70424-68-9	107-PeCB	U	1.99	pg/g	1.99
70362-41-3	108-PeCB	CU	3.97	pg/g	3.97
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.97	pg/g	3.97
39635-32-0	111-PeCB	U	1.99	pg/g	1.99
74472-36-9	112-PeCB	U	1.99	pg/g	1.99
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.99	pg/g	1.99
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.99	pg/g	1.99
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.99	pg/g	1.99
56558-18-0	121-PeCB	U	1.99	pg/g	1.99
76842-07-4	122-PeCB	U	1.99	pg/g	1.99
65510-44-3	123-PeCB	U	1.99	pg/g	1.99
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.99	pg/g	1.99
39635-33-1	127-PeCB	U	1.99	pg/g	1.99
38380-07-3	128-HxCB	CU	3.97	pg/g	3.97

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/09/2017 16:29	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c09nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.96	pg/g	5.96
52663-66-8	130-HxCB	U	1.99	pg/g	1.99
61798-70-7	131-HxCB	U	1.99	pg/g	1.99
38380-05-1	132-HxCB	U	1.99	pg/g	1.99
35694-04-3	133-HxCB	U	1.99	pg/g	1.99
52704-70-8	134-HxCB	U	1.99	pg/g	1.99
52744-13-5	135-HxCB	CU	3.97	pg/g	3.97
38411-22-2	136-HxCB	U	1.99	pg/g	1.99
35694-06-5	137-HxCB	U	1.99	pg/g	1.99
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.97	pg/g	3.97
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.99	pg/g	1.99
41411-61-4	142-HxCB	U	1.99	pg/g	1.99
68194-15-0	143-HxCB	U	1.99	pg/g	1.99
68194-14-9	144-HxCB	U	1.99	pg/g	1.99
74472-40-5	145-HxCB	U	1.99	pg/g	1.99
51908-16-8	146-HxCB	U	1.99	pg/g	1.99
68194-13-8	147-HxCB	CU	3.97	pg/g	3.97
74472-41-6	148-HxCB	U	1.99	pg/g	1.99
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.99	pg/g	1.99
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.99	pg/g	1.99
35065-27-1	153-HxCB	CU	3.97	pg/g	3.97
60145-22-4	154-HxCB	U	1.99	pg/g	1.99
33979-03-2	155-HxCB	U	1.99	pg/g	1.99
38380-08-4	156-HxCB	CU	3.97	pg/g	3.97
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.99	pg/g	1.99
39635-35-3	159-HxCB	U	1.99	pg/g	1.99
41411-62-5	160-HxCB	U	1.99	pg/g	1.99

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/09/2017 16:29	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c09nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.99	pg/g	1.99
39635-34-2	162-HxCB	U	1.99	pg/g	1.99
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.99	pg/g	1.99
74472-46-1	165-HxCB	U	1.99	pg/g	1.99
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.99	pg/g	1.99
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.99	pg/g	1.99
35065-30-6	170-HpCB	U	1.99	pg/g	1.99
52663-71-5	171-HpCB	CU	3.97	pg/g	3.97
52663-74-8	172-HpCB	U	1.99	pg/g	1.99
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.99	pg/g	1.99
40186-70-7	175-HpCB	U	1.99	pg/g	1.99
52663-65-7	176-HpCB	U	1.99	pg/g	1.99
52663-70-4	177-HpCB	U	1.99	pg/g	1.99
52663-67-9	178-HpCB	U	1.99	pg/g	1.99
52663-64-6	179-HpCB	U	1.99	pg/g	1.99
35065-29-3	180-HpCB	CU	3.97	pg/g	3.97
74472-47-2	181-HpCB	U	1.99	pg/g	1.99
60145-23-5	182-HpCB	U	1.99	pg/g	1.99
52663-69-1	183-HpCB	CU	3.97	pg/g	3.97
74472-48-3	184-HpCB	U	1.99	pg/g	1.99
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.99	pg/g	1.99
52663-68-0	187-HpCB	U	1.99	pg/g	1.99
74487-85-7	188-HpCB	U	1.99	pg/g	1.99
39635-31-9	189-HpCB	U	1.99	pg/g	1.99
41411-64-7	190-HpCB	U	1.99	pg/g	1.99
74472-50-7	191-HpCB	U	1.99	pg/g	1.99
74472-51-8	192-HpCB	U	1.99	pg/g	1.99

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 16:29	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.36 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.99	pg/g	1.99
52663-78-2	195-OcCB	U	1.99	pg/g	1.99
42740-50-1	196-OcCB	U	1.99	pg/g	1.99
33091-17-7	197-OcCB	CU	3.97	pg/g	3.97
68194-17-2	198-OcCB	CU	3.97	pg/g	3.97
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.99	pg/g	1.99
2136-99-4	202-OcCB	U	1.99	pg/g	1.99
52663-76-0	203-OcCB	U	1.99	pg/g	1.99
74472-52-9	204-OcCB	U	1.99	pg/g	1.99
74472-53-0	205-OcCB	U	1.99	pg/g	1.99
40186-72-9	206-NoCB	U	1.99	pg/g	1.99
52663-79-3	207-NoCB	U	1.99	pg/g	1.99
52663-77-1	208-NoCB	U	1.99	pg/g	1.99
2051-24-3	209-DeCB	U	1.99	pg/g	1.99
1336-36-3	Total PCB Congeners	U	1.99	pg/g	1.99

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		72.0	199	pg/g	36.2	(15%-150%)
13C-3-MoCB		82.8	199	pg/g	41.7	(15%-150%)
13C-4-DiCB		92.7	199	pg/g	46.7	(25%-150%)
13C-15-DiCB		207	199	pg/g	104	(25%-150%)
13C-19-TrCB		129	199	pg/g	65.1	(25%-150%)
13C-37-TrCB		154	199	pg/g	77.5	(25%-150%)
13C-54-TeCB		95.3	199	pg/g	48.0	(25%-150%)
13C-77-TeCB		224	199	pg/g	113	(25%-150%)
13C-81-TeCB		224	199	pg/g	112	(25%-150%)
13C-104-PeCB		158	199	pg/g	79.7	(25%-150%)
13C-105-PeCB		166	199	pg/g	83.6	(25%-150%)
13C-114-PeCB		168	199	pg/g	84.7	(25%-150%)
13C-118-PeCB		174	199	pg/g	87.4	(25%-150%)
13C-123-PeCB		177	199	pg/g	88.9	(25%-150%)
13C-126-PeCB		165	199	pg/g	83.2	(25%-150%)
13C-155-HxCB		172	199	pg/g	86.4	(25%-150%)
13C-156-HxCB	C	318	397	pg/g	80.0	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		165	199	pg/g	82.9	(25%-150%)
13C-169-HxCB		144	199	pg/g	72.4	(25%-150%)
13C-188-HpCB		215	199	pg/g	108	(25%-150%)
13C-189-HpCB		168	199	pg/g	84.5	(25%-150%)



**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536003	<b>Date Collected:</b> 10/09/2017 15:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 18.6
<b>Client ID:</b> VC-IRB-15-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 16:29	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.36 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			211	199	pg/g	106 (25%-150%)
13C-205-OcCB			185	199	pg/g	93.2 (25%-150%)
13C-206-NoCB			184	199	pg/g	92.3 (25%-150%)
13C-208-NoCB			169	199	pg/g	85.1 (25%-150%)
13C-209-DeCB			161	199	pg/g	81.0 (25%-150%)
13C-111-PeCB			168	199	pg/g	84.5 (30%-135%)
13C-28-TrCB			106	199	pg/g	53.4 (30%-135%)
13C-178-HpCB			168	199	pg/g	84.6 (30%-135%)

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 11:37	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 14.32 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2	pg/g	2.00
2051-61-8	2-MoCB	U	2	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB	U	2	pg/g	2.00
16605-91-7	5-DiCB	U	2	pg/g	2.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	2	pg/g	2.00
34883-43-7	8-DiCB	U	2	pg/g	2.00
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	2	pg/g	2.00
2050-67-1	11-DiCB	U	20	pg/g	20.0
2974-92-7	12-DiCB	CU	4	pg/g	4.00
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2	pg/g	2.00
2050-68-2	15-DiCB	U	2	pg/g	2.00
38444-78-9	16-TrCB	U	2	pg/g	2.00
37680-66-3	17-TrCB	U	2	pg/g	2.00
37680-65-2	18-TrCB	CU	4	pg/g	4.00
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	4	pg/g	4.00
55702-46-0	21-TrCB	CU	4	pg/g	4.00
38444-85-8	22-TrCB	U	2	pg/g	2.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	4	pg/g	4.00
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2	pg/g	2.00
38444-77-8	32-TrCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
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Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 11:37	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 14.32 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	2	pg/g	2.00
38444-87-0	36-TrCB	U	2	pg/g	2.00
38444-90-5	37-TrCB	U	2	pg/g	2.00
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	2	pg/g	2.00
38444-93-8	40-TeCB	CU	4	pg/g	4.00
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	2	pg/g	2.00
41464-39-5	44-TeCB	CU	6	pg/g	6.00
70362-45-7	45-TeCB	CU	4	pg/g	4.00
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	4	pg/g	4.00
62796-65-0	50-TeCB	CU	4	pg/g	4.00
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	2	pg/g	2.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	6	pg/g	6.00
33025-41-1	60-TeCB	U	2	pg/g	2.00
33284-53-6	61-TeCB	CU	8.01	pg/g	8.01
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2	pg/g	2.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 11:37	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 14.32 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2	pg/g	2.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2	pg/g	2.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	2	pg/g	2.00
33284-52-5	80-TeCB	U	2	pg/g	2.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	2	pg/g	2.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	6	pg/g	6.00
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4	pg/g	4.00
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	6	pg/g	6.00
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	4	pg/g	4.00
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	2	pg/g	2.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 11:37	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 14.32 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4	pg/g	4.00
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2	pg/g	2.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	2	pg/g	2.00
70362-41-3	108-PeCB	CU	4	pg/g	4.00
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4	pg/g	4.00
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2	pg/g	2.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	4	pg/g	4.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 11:37	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 14.32 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6	pg/g	6.00
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	4	pg/g	4.00
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4	pg/g	4.00
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2	pg/g	2.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	4	pg/g	4.00
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	4	pg/g	4.00
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	4	pg/g	4.00
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 11:37	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 14.32 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	4	pg/g	4.00
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	4	pg/g	4.00
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	4	pg/g	4.00
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 11:37	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 14.32 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	4	pg/g	4.00
68194-17-2	198-OcCB	CU	4	pg/g	4.00
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners	U	2	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		59.6	200	pg/g	29.8	(15%-150%)
13C-3-MoCB		69.4	200	pg/g	34.7	(15%-150%)
13C-4-DiCB		77.0	200	pg/g	38.5	(25%-150%)
13C-15-DiCB		115	200	pg/g	57.5	(25%-150%)
13C-19-TrCB		104	200	pg/g	52.1	(25%-150%)
13C-37-TrCB		97.7	200	pg/g	48.8	(25%-150%)
13C-54-TeCB		99.8	200	pg/g	49.8	(25%-150%)
13C-77-TeCB		104	200	pg/g	51.9	(25%-150%)
13C-81-TeCB		106	200	pg/g	52.9	(25%-150%)
13C-104-PeCB		128	200	pg/g	63.8	(25%-150%)
13C-105-PeCB		103	200	pg/g	51.4	(25%-150%)
13C-114-PeCB		106	200	pg/g	53.2	(25%-150%)
13C-118-PeCB		108	200	pg/g	53.8	(25%-150%)
13C-123-PeCB		111	200	pg/g	55.4	(25%-150%)
13C-126-PeCB		94.8	200	pg/g	47.4	(25%-150%)
13C-155-HxCB		115	200	pg/g	57.6	(25%-150%)
13C-156-HxCB	C	191	400	pg/g	47.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		98.4	200	pg/g	49.2	(25%-150%)
13C-169-HxCB		84.0	200	pg/g	41.9	(25%-150%)
13C-188-HpCB		145	200	pg/g	72.7	(25%-150%)
13C-189-HpCB		100	200	pg/g	50.1	(25%-150%)



**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11536004	<b>Date Collected:</b> 10/09/2017 15:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 30.2
<b>Client ID:</b> VC-IRB-15-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 11:37	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 14.32 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			140	200	pg/g	70.1 (25%-150%)
13C-205-OcCB			118	200	pg/g	58.8 (25%-150%)
13C-206-NoCB			139	200	pg/g	69.5 (25%-150%)
13C-208-NoCB			145	200	pg/g	72.3 (25%-150%)
13C-209-DeCB			150	200	pg/g	75.0 (25%-150%)
13C-111-PeCB			161	200	pg/g	80.4 (30%-135%)
13C-28-TrCB			139	200	pg/g	69.6 (30%-135%)
13C-178-HpCB			198	200	pg/g	99.2 (30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U** Analyte was analyzed for, but not detected above the specified detection limit.

# Quality Control Summary

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
12019859	LCS for batch 36007	13C-1-MoCB		41.3	(15%-140%)	
		13C-3-MoCB		49.4	(15%-140%)	
		13C-4-DiCB		53.0	(30%-140%)	
		13C-15-DiCB		82.9	(30%-140%)	
		13C-19-TrCB		71.3	(30%-140%)	
		13C-37-TrCB		76.7	(30%-140%)	
		13C-54-TeCB		70.6	(30%-140%)	
		13C-77-TeCB		84.6	(30%-140%)	
		13C-81-TeCB		85.4	(30%-140%)	
		13C-104-PeCB		89.9	(30%-140%)	
		13C-105-PeCB		74.3	(30%-140%)	
		13C-114-PeCB		76.6	(30%-140%)	
		13C-118-PeCB		78.3	(30%-140%)	
		13C-123-PeCB		80.5	(30%-140%)	
		13C-126-PeCB		78.5	(30%-140%)	
		13C-155-HxCB		84.3	(30%-140%)	
		13C-156-HxCB		71.8	(30%-140%)	
		13C-157-HxCB		C C156L		
		13C-167-HxCB			74.5	(30%-140%)
		13C-169-HxCB			71.5	(30%-140%)
		13C-188-HpCB			92.0	(30%-140%)
		13C-189-HpCB			69.5	(30%-140%)
		13C-202-OcCB			89.9	(30%-140%)
		13C-205-OcCB			88.8	(30%-140%)
		13C-206-NoCB			102	(30%-140%)
		13C-208-NoCB			91.7	(30%-140%)
		13C-209-DeCB			114	(30%-140%)
		13C-111-PeCB			83.6	(40%-125%)
		13C-28-TrCB			67.8	(40%-125%)
		13C-178-HpCB			103	(40%-125%)
12019860	LCSD for batch 36007	13C-1-MoCB		42.4	(15%-140%)	
		13C-3-MoCB		49.2	(15%-140%)	
		13C-4-DiCB		53.8	(30%-140%)	
		13C-15-DiCB		83.5	(30%-140%)	
		13C-19-TrCB		70.9	(30%-140%)	
		13C-37-TrCB		81.9	(30%-140%)	
		13C-54-TeCB		71.9	(30%-140%)	
		13C-77-TeCB		93.8	(30%-140%)	
		13C-81-TeCB		92.3	(30%-140%)	
		13C-104-PeCB		91.8	(30%-140%)	
		13C-105-PeCB		80.9	(30%-140%)	
		13C-114-PeCB		82.3	(30%-140%)	
		13C-118-PeCB		83.5	(30%-140%)	
		13C-123-PeCB		86.2	(30%-140%)	
		13C-126-PeCB		85.9	(30%-140%)	
		13C-155-HxCB		83.1	(30%-140%)	
		13C-156-HxCB		75.6	(30%-140%)	
		13C-157-HxCB		C C156L		
		13C-167-HxCB			78.1	(30%-140%)
		13C-169-HxCB			77.4	(30%-140%)
13C-188-HpCB			91.8	(30%-140%)		
13C-189-HpCB			73.3	(30%-140%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019860	LCSD for batch 36007	13C-202-OcCB		91.9	(30%-140%)
		13C-205-OcCB		91.4	(30%-140%)
		13C-206-NoCB		104	(30%-140%)
		13C-208-NoCB		92.0	(30%-140%)
		13C-209-DeCB		115	(30%-140%)
		13C-111-PeCB		87.1	(40%-125%)
		13C-28-TrCB		68.8	(40%-125%)
		13C-178-HpCB		102	(40%-125%)
12019858	MB for batch 36007	13C-1-MoCB		41.5	(15%-150%)
		13C-3-MoCB		47.2	(15%-150%)
		13C-4-DiCB		52.3	(25%-150%)
		13C-15-DiCB		79.6	(25%-150%)
		13C-19-TrCB		69.3	(25%-150%)
		13C-37-TrCB		72.8	(25%-150%)
		13C-54-TeCB		69.0	(25%-150%)
		13C-77-TeCB		78.5	(25%-150%)
		13C-81-TeCB		79.0	(25%-150%)
		13C-104-PeCB		89.7	(25%-150%)
		13C-105-PeCB		72.2	(25%-150%)
		13C-114-PeCB		73.0	(25%-150%)
		13C-118-PeCB		75.0	(25%-150%)
		13C-123-PeCB		77.8	(25%-150%)
		13C-126-PeCB		73.9	(25%-150%)
		13C-155-HxCB		81.7	(25%-150%)
		13C-156-HxCB	C C156L	69.4	(25%-150%)
		13C-157-HxCB			
		13C-167-HxCB		72.3	(25%-150%)
		13C-169-HxCB		69.0	(25%-150%)
		13C-188-HpCB		88.4	(25%-150%)
		13C-189-HpCB		66.2	(25%-150%)
		13C-202-OcCB		86.4	(25%-150%)
13C-205-OcCB		85.4	(25%-150%)		
13C-206-NoCB		98.1	(25%-150%)		
13C-208-NoCB		87.7	(25%-150%)		
13C-209-DeCB		109	(25%-150%)		
13C-111-PeCB		79.2	(30%-135%)		
13C-28-TrCB		65.9	(30%-135%)		
13C-178-HpCB		97.6	(30%-135%)		
11536001	VC-IRB-14-ALT-S1	13C-1-MoCB		37.1	(15%-150%)
		13C-3-MoCB		44.0	(15%-150%)
		13C-4-DiCB		46.8	(25%-150%)
		13C-15-DiCB		78.1	(25%-150%)
		13C-19-TrCB		66.8	(25%-150%)
		13C-37-TrCB		68.9	(25%-150%)
		13C-54-TeCB		65.4	(25%-150%)
		13C-77-TeCB		76.7	(25%-150%)
		13C-81-TeCB		66.6	(25%-150%)
		13C-104-PeCB		86.4	(25%-150%)
		13C-105-PeCB		66.7	(25%-150%)
		13C-114-PeCB		68.9	(25%-150%)
		13C-118-PeCB		70.4	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
11536001	VC-IRB-14-ALT-S1	13C-123-PeCB		72.2	(25%-150%)	
		13C-126-PeCB		63.1	(25%-150%)	
		13C-155-HxCB		82.7	(25%-150%)	
		13C-156-HxCB	C	62.5	(25%-150%)	
		13C-157-HxCB	C156L			
		13C-167-HxCB		66.9	(25%-150%)	
		13C-169-HxCB		57.5	(25%-150%)	
		13C-188-HpCB		100	(25%-150%)	
		13C-189-HpCB		65.1	(25%-150%)	
		13C-202-OcCB		94.2	(25%-150%)	
		13C-205-OcCB		78.7	(25%-150%)	
		13C-206-NoCB		89.6	(25%-150%)	
		13C-208-NoCB		91.2	(25%-150%)	
		13C-209-DeCB		80.1	(25%-150%)	
		13C-111-PeCB		78.9	(30%-135%)	
		13C-28-TrCB		64.9	(30%-135%)	
		13C-178-HpCB		97.1	(30%-135%)	
11536002	VC-IRB-14-ALT-S2	13C-1-MoCB		20.3	(15%-150%)	
		13C-3-MoCB		28.8	(15%-150%)	
		13C-4-DiCB		32.1	(25%-150%)	
		13C-15-DiCB		62.6	(25%-150%)	
		13C-19-TrCB		51.7	(25%-150%)	
		13C-37-TrCB		60.1	(25%-150%)	
		13C-54-TeCB		52.1	(25%-150%)	
		13C-77-TeCB		71.4	(25%-150%)	
		13C-81-TeCB		72.5	(25%-150%)	
		13C-104-PeCB		73.5	(25%-150%)	
		13C-105-PeCB		61.9	(25%-150%)	
		13C-114-PeCB		64.3	(25%-150%)	
		13C-118-PeCB		64.9	(25%-150%)	
		13C-123-PeCB		66.8	(25%-150%)	
		13C-126-PeCB		58.5	(25%-150%)	
		13C-155-HxCB		74.6	(25%-150%)	
		13C-156-HxCB	C	58.6	(25%-150%)	
		13C-157-HxCB	C156L			
		13C-167-HxCB		60.7	(25%-150%)	
		13C-169-HxCB		53.9	(25%-150%)	
		13C-188-HpCB		92.3	(25%-150%)	
		13C-189-HpCB		60.8	(25%-150%)	
		13C-202-OcCB		85.5	(25%-150%)	
13C-205-OcCB		74.2	(25%-150%)			
13C-206-NoCB		84.1	(25%-150%)			
13C-208-NoCB		83.6	(25%-150%)			
13C-209-DeCB		93.3	(25%-150%)			
13C-111-PeCB		88.8	(30%-135%)			
13C-28-TrCB		65.8	(30%-135%)			
13C-178-HpCB		109	(30%-135%)			
12019921	LCS for batch 36078	13C-1-MoCB		15.5	(15%-140%)	
		13C-3-MoCB		27.5	(15%-140%)	
		13C-4-DiCB		24.4 *	(30%-140%)	
		13C-15-DiCB		91.5	(30%-140%)	

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019921	LCS for batch 36078	13C-19-TrCB		48.0	(30%-140%)
		13C-37-TrCB		77.3	(30%-140%)
		13C-54-TeCB		41.3	(30%-140%)
		13C-77-TeCB		100	(30%-140%)
		13C-81-TeCB		98.5	(30%-140%)
		13C-104-PeCB		69.3	(30%-140%)
		13C-105-PeCB		77.8	(30%-140%)
		13C-114-PeCB		78.5	(30%-140%)
		13C-118-PeCB		80.3	(30%-140%)
		13C-123-PeCB		82.2	(30%-140%)
		13C-126-PeCB		78.8	(30%-140%)
		13C-155-HxCB		76.7	(30%-140%)
		13C-156-HxCB		74.3	(30%-140%)
		13C-157-HxCB			
		13C-167-HxCB		76.7	(30%-140%)
		13C-169-HxCB		67.8	(30%-140%)
		13C-188-HpCB		102	(30%-140%)
		13C-189-HpCB		77.9	(30%-140%)
		13C-202-OcCB		94.7	(30%-140%)
		13C-205-OcCB		87.3	(30%-140%)
		13C-206-NoCB		87.3	(30%-140%)
		13C-208-NoCB		79.4	(30%-140%)
		13C-209-DeCB		83.5	(30%-140%)
		13C-111-PeCB		81.6	(40%-125%)
		13C-28-TrCB		52.2	(40%-125%)
		13C-178-HpCB		86.0	(40%-125%)
12019922	LCSD for batch 36078	13C-1-MoCB		14.6 *	(15%-140%)
		13C-3-MoCB		28.7	(15%-140%)
		13C-4-DiCB		27.0 *	(30%-140%)
		13C-15-DiCB		92.7	(30%-140%)
		13C-19-TrCB		48.2	(30%-140%)
		13C-37-TrCB		78.0	(30%-140%)
		13C-54-TeCB		42.3	(30%-140%)
		13C-77-TeCB		105	(30%-140%)
		13C-81-TeCB		105	(30%-140%)
		13C-104-PeCB		69.9	(30%-140%)
		13C-105-PeCB		77.8	(30%-140%)
		13C-114-PeCB		78.6	(30%-140%)
		13C-118-PeCB		81.0	(30%-140%)
		13C-123-PeCB		82.1	(30%-140%)
		13C-126-PeCB		79.1	(30%-140%)
		13C-155-HxCB		78.8	(30%-140%)
		13C-156-HxCB		74.6	(30%-140%)
		13C-157-HxCB			
		13C-167-HxCB		77.3	(30%-140%)
		13C-169-HxCB		69.4	(30%-140%)
		13C-188-HpCB		102	(30%-140%)
		13C-189-HpCB		76.6	(30%-140%)
		13C-202-OcCB		96.0	(30%-140%)
		13C-205-OcCB		87.4	(30%-140%)
		13C-206-NoCB		86.8	(30%-140%)
		13C-208-NoCB		79.3	(30%-140%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019922	LCSD for batch 36078	13C-209-DeCB		81.1	(30%-140%)
		13C-111-PeCB		81.5	(40%-125%)
		13C-28-TrCB		54.1	(40%-125%)
		13C-178-HpCB		84.6	(40%-125%)
12019920	MB for batch 36078	13C-1-MoCB		10.3 *	(15%-150%)
		13C-3-MoCB		29.2	(15%-150%)
		13C-4-DiCB		22.0 *	(25%-150%)
		13C-15-DiCB		93.9	(25%-150%)
		13C-19-TrCB		46.1	(25%-150%)
		13C-37-TrCB		70.6	(25%-150%)
		13C-54-TeCB		37.3	(25%-150%)
		13C-77-TeCB		98.9	(25%-150%)
		13C-81-TeCB		96.3	(25%-150%)
		13C-104-PeCB		69.1	(25%-150%)
		13C-105-PeCB		77.4	(25%-150%)
		13C-114-PeCB		77.6	(25%-150%)
		13C-118-PeCB		79.2	(25%-150%)
		13C-123-PeCB		81.0	(25%-150%)
		13C-126-PeCB		78.6	(25%-150%)
		13C-155-HxCB		75.4	(25%-150%)
		13C-156-HxCB		74.1	(25%-150%)
		13C-157-HxCB	C		
		13C-167-HxCB	C156L	76.8	(25%-150%)
		13C-169-HxCB		67.7	(25%-150%)
		13C-188-HpCB		98.5	(25%-150%)
		13C-189-HpCB		75.0	(25%-150%)
		13C-202-OcCB		94.7	(25%-150%)
		13C-205-OcCB		85.5	(25%-150%)
		13C-206-NoCB		84.4	(25%-150%)
		13C-208-NoCB		76.9	(25%-150%)
13C-209-DeCB		76.4	(25%-150%)		
13C-111-PeCB		81.4	(30%-135%)		
13C-28-TrCB		54.6	(30%-135%)		
13C-178-HpCB		80.3	(30%-135%)		
11536003	VC-IRB-15-ALT-S1	13C-1-MoCB		36.2	(15%-150%)
		13C-3-MoCB		41.7	(15%-150%)
		13C-4-DiCB		46.7	(25%-150%)
		13C-15-DiCB		104	(25%-150%)
		13C-19-TrCB		65.1	(25%-150%)
		13C-37-TrCB		77.5	(25%-150%)
		13C-54-TeCB		48.0	(25%-150%)
		13C-77-TeCB		113	(25%-150%)
		13C-81-TeCB		112	(25%-150%)
		13C-104-PeCB		79.7	(25%-150%)
		13C-105-PeCB		83.6	(25%-150%)
		13C-114-PeCB		84.7	(25%-150%)
		13C-118-PeCB		87.4	(25%-150%)
		13C-123-PeCB		88.9	(25%-150%)
		13C-126-PeCB		83.2	(25%-150%)
		13C-155-HxCB		86.4	(25%-150%)
13C-156-HxCB	C	80.0	(25%-150%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736485

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11536003	VC-IRB-15-ALT-S1	13C-157-HxCB	C156L		
		13C-167-HxCB		82.9	(25%-150%)
		13C-169-HxCB		72.4	(25%-150%)
		13C-188-HpCB		108	(25%-150%)
		13C-189-HpCB		84.5	(25%-150%)
		13C-202-OcCB		106	(25%-150%)
		13C-205-OcCB		93.2	(25%-150%)
		13C-206-NoCB		92.3	(25%-150%)
		13C-208-NoCB		85.1	(25%-150%)
		13C-209-DeCB		81.0	(25%-150%)
		13C-111-PeCB		84.5	(30%-135%)
		13C-28-TrCB		53.4	(30%-135%)
		13C-178-HpCB		84.6	(30%-135%)
11536004	VC-IRB-15-ALT-S2	13C-1-MoCB		29.8	(15%-150%)
		13C-3-MoCB		34.7	(15%-150%)
		13C-4-DiCB		38.5	(25%-150%)
		13C-15-DiCB		57.5	(25%-150%)
		13C-19-TrCB		52.1	(25%-150%)
		13C-37-TrCB		48.8	(25%-150%)
		13C-54-TeCB		49.8	(25%-150%)
		13C-77-TeCB		51.9	(25%-150%)
		13C-81-TeCB		52.9	(25%-150%)
		13C-104-PeCB		63.8	(25%-150%)
		13C-105-PeCB		51.4	(25%-150%)
		13C-114-PeCB		53.2	(25%-150%)
		13C-118-PeCB		53.8	(25%-150%)
		13C-123-PeCB		55.4	(25%-150%)
		13C-126-PeCB		47.4	(25%-150%)
		13C-155-HxCB		57.6	(25%-150%)
		13C-156-HxCB	C	47.7	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		49.2	(25%-150%)
		13C-169-HxCB		41.9	(25%-150%)
		13C-188-HpCB		72.7	(25%-150%)
		13C-189-HpCB		50.1	(25%-150%)
		13C-202-OcCB		70.1	(25%-150%)
		13C-205-OcCB		58.8	(25%-150%)
		13C-206-NoCB		69.5	(25%-150%)
		13C-208-NoCB		72.3	(25%-150%)
		13C-209-DeCB		75.0	(25%-150%)
13C-111-PeCB		80.4	(30%-135%)		
13C-28-TrCB		69.6	(30%-135%)		
13C-178-HpCB		99.2	(30%-135%)		

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted



**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1736485  
**Client ID:** LCS for batch 36007  
**Lab Sample ID:** 12019859  
**Instrument:** HRP791  
**Analyst:** MLS

**Sample Type:** Laboratory Control Sample  
**Matrix:** SOIL  
**Analysis Date:** 10/27/2017 16:42  
**Prep Batch ID:** 36007  
**Batch ID:** 36009  
**Dilution:** 1

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS 1-MoCB	50.0	49.3	98.7	50-150
2051-62-9	LCS 3-MoCB	50.0	52.1	104	50-150
13029-08-8	LCS 4-DiCB	50.0	48.2	96.4	50-150
2050-68-2	LCS 15-DiCB	50.0	59.7	119	50-150
38444-73-4	LCS 19-TrCB	50.0	48.5	96.9	50-150
38444-90-5	LCS 37-TrCB	50.0	51.4	103	50-150
15968-05-5	LCS 54-TeCB	100	92.4	92.4	50-150
32598-13-3	LCS 77-TeCB	100	97.0	97	50-150
70362-50-4	LCS 81-TeCB	100	106	106	50-150
56558-16-8	LCS 104-PeCB	100	97.2	97.2	50-150
32598-14-4	LCS 105-PeCB	100	119	119	50-150
74472-37-0	LCS 114-PeCB	100	113	113	50-150
31508-00-6	LCS 118-PeCB	100	104	104	50-150
65510-44-3	LCS 123-PeCB	100	98.6	98.6	50-150
57465-28-8	LCS 126-PeCB	100	117	117	50-150
33979-03-2	LCS 155-HxCB	100	100	100	50-150
38380-08-4	LCS 156-HxCB	200	C 232	116	50-150
69782-90-7	LCS 157-HxCB		C156		
52663-72-6	LCS 167-HxCB	100	117	117	50-150
32774-16-6	LCS 169-HxCB	100	111	111	50-150
74487-85-7	LCS 188-HpCB	100	95.8	95.8	50-150
39635-31-9	LCS 189-HpCB	100	113	113	50-150
2136-99-4	LCS 202-OcCB	150	147	97.9	50-150
74472-53-0	LCS 205-OcCB	150	146	97.4	50-150
40186-72-9	LCS 206-NoCB	150	142	94.3	50-150
52663-77-1	LCS 208-NoCB	150	154	103	50-150
2051-24-3	LCS 209-DeCB	150	151	101	50-150

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 2 of 2

SDG Number: L1736485

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 36007

Matrix: SOIL

Lab Sample ID: 12019860

Instrument: HRP791

Analysis Date: 10/27/2017 17:49

Dilution: 1

Analyst: MLS

Prep Batch ID: 36007

Batch ID: 36009

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD 1-MoCB	50.0	50.1	100	50-150	1.49	0-20
2051-62-9	LCSD 3-MoCB	50.0	53.3	107	50-150	2.24	0-20
13029-08-8	LCSD 4-DiCB	50.0	49.2	98.3	50-150	2.05	0-20
2050-68-2	LCSD 15-DiCB	50.0	57.5	115	50-150	3.70	0-20
38444-73-4	LCSD 19-TrCB	50.0	50.9	102	50-150	4.83	0-20
38444-90-5	LCSD 37-TrCB	50.0	51.3	103	50-150	0.362	0-20
15968-05-5	LCSD 54-TeCB	100	94.3	94.3	50-150	2.14	0-20
32598-13-3	LCSD 77-TeCB	100	96.5	96.5	50-150	0.486	0-20
70362-50-4	LCSD 81-TeCB	100	107	107	50-150	0.662	0-20
56558-16-8	LCSD 104-PeCB	100	97.1	97.1	50-150	0.105	0-20
32598-14-4	LCSD 105-PeCB	100	118	118	50-150	0.881	0-20
74472-37-0	LCSD 114-PeCB	100	112	112	50-150	0.925	0-20
31508-00-6	LCSD 118-PeCB	100	106	106	50-150	1.62	0-20
65510-44-3	LCSD 123-PeCB	100	98.0	98	50-150	0.594	0-20
57465-28-8	LCSD 126-PeCB	100	115	115	50-150	1.21	0-20
33979-03-2	LCSD 155-HxCB	100	105	105	50-150	4.77	0-20
38380-08-4	LCSD 156-HxCB	200	C 233	117	50-150	0.495	0-20
69782-90-7	LCSD 157-HxCB		C156				
52663-72-6	LCSD 167-HxCB	100	117	117	50-150	0.130	0-20
32774-16-6	LCSD 169-HxCB	100	113	113	50-150	1.87	0-20
74487-85-7	LCSD 188-HpCB	100	95.8	95.8	50-150	0.00209	0-20
39635-31-9	LCSD 189-HpCB	100	111	111	50-150	0.936	0-20
2136-99-4	LCSD 202-OcCB	150	148	98.5	50-150	0.565	0-20
74472-53-0	LCSD 205-OcCB	150	146	97.5	50-150	0.0944	0-20
40186-72-9	LCSD 206-NoCB	150	141	93.8	50-150	0.561	0-20
52663-77-1	LCSD 208-NoCB	150	156	104	50-150	1.47	0-20
2051-24-3	LCSD 209-DeCB	150	149	99.4	50-150	1.15	0-20

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 1 of 2

SDG Number: L1736485

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 36078

Matrix: SOIL

Lab Sample ID: 12019921

Instrument: HRP791

Analysis Date: 11/09/2017 13:09

Dilution: 1

Analyst: MLS

Prep Batch ID: 36078

Batch ID: 36080

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS 1-MoCB	50.0	66.1	132	50-150
2051-62-9	LCS 3-MoCB	50.0	60.5	121	50-150
13029-08-8	LCS 4-DiCB	50.0	63.4	127	50-150
2050-68-2	LCS 15-DiCB	50.0	60.8	122	50-150
38444-73-4	LCS 19-TrCB	50.0	56.7	113	50-150
38444-90-5	LCS 37-TrCB	50.0	49.9	99.7	50-150
15968-05-5	LCS 54-TeCB	100	102	102	50-150
32598-13-3	LCS 77-TeCB	100	97.1	97.1	50-150
70362-50-4	LCS 81-TeCB	100	105	105	50-150
56558-16-8	LCS 104-PeCB	100	101	101	50-150
32598-14-4	LCS 105-PeCB	100	115	115	50-150
74472-37-0	LCS 114-PeCB	100	112	112	50-150
31508-00-6	LCS 118-PeCB	100	108	108	50-150
65510-44-3	LCS 123-PeCB	100	102	102	50-150
57465-28-8	LCS 126-PeCB	100	117	117	50-150
33979-03-2	LCS 155-HxCB	100	102	102	50-150
38380-08-4	LCS 156-HxCB	200	C 234	117	50-150
69782-90-7	LCS 157-HxCB		C156		
52663-72-6	LCS 167-HxCB	100	120	120	50-150
32774-16-6	LCS 169-HxCB	100	113	113	50-150
74487-85-7	LCS 188-HpCB	100	99.6	99.6	50-150
39635-31-9	LCS 189-HpCB	100	112	112	50-150
2136-99-4	LCS 202-OcCB	150	154	103	50-150
74472-53-0	LCS 205-OcCB	150	150	100	50-150
40186-72-9	LCS 206-NoCB	150	147	97.8	50-150
52663-77-1	LCS 208-NoCB	150	161	107	50-150
2051-24-3	LCS 209-DeCB	150	154	103	50-150

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 2 of 2

SDG Number: L1736485

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 36078

Matrix: SOIL

Lab Sample ID: 12019922

Instrument: HRP791

Analysis Date: 11/09/2017 14:16

Dilution: 1

Analyst: MLS

Prep Batch ID:

Batch ID: 36080

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD 1-MoCB	50.0	33.0	65.9	50-150	66.9 *	0-20
2051-62-9	LCSD 3-MoCB	50.0	42.5	85	50-150	35.0 *	0-20
13029-08-8	LCSD 4-DiCB	50.0	40.0	80	50-150	45.2 *	0-20
2050-68-2	LCSD 15-DiCB	50.0	57.3	115	50-150	5.97	0-20
38444-73-4	LCSD 19-TrCB	50.0	47.0	94.1	50-150	18.6	0-20
38444-90-5	LCSD 37-TrCB	50.0	47.9	95.8	50-150	3.97	0-20
15968-05-5	LCSD 54-TeCB	100	93.7	93.7	50-150	8.77	0-20
32598-13-3	LCSD 77-TeCB	100	96.1	96.1	50-150	0.992	0-20
70362-50-4	LCSD 81-TeCB	100	105	105	50-150	0.171	0-20
56558-16-8	LCSD 104-PeCB	100	97.0	97	50-150	4.40	0-20
32598-14-4	LCSD 105-PeCB	100	115	115	50-150	0.265	0-20
74472-37-0	LCSD 114-PeCB	100	110	110	50-150	1.74	0-20
31508-00-6	LCSD 118-PeCB	100	107	107	50-150	1.18	0-20
65510-44-3	LCSD 123-PeCB	100	99.3	99.3	50-150	2.62	0-20
57465-28-8	LCSD 126-PeCB	100	114	114	50-150	1.94	0-20
33979-03-2	LCSD 155-HxCB	100	96.8	96.8	50-150	5.15	0-20
38380-08-4	LCSD 156-HxCB	200	C 233	116	50-150	0.478	0-20
69782-90-7	LCSD 157-HxCB		C156				
52663-72-6	LCSD 167-HxCB	100	118	118	50-150	1.48	0-20
32774-16-6	LCSD 169-HxCB	100	114	114	50-150	0.452	0-20
74487-85-7	LCSD 188-HpCB	100	99.2	99.2	50-150	0.475	0-20
39635-31-9	LCSD 189-HpCB	100	113	113	50-150	0.173	0-20
2136-99-4	LCSD 202-OcCB	150	154	103	50-150	0.0596	0-20
74472-53-0	LCSD 205-OcCB	150	151	101	50-150	0.665	0-20
40186-72-9	LCSD 206-NoCB	150	147	97.7	50-150	0.0532	0-20
52663-77-1	LCSD 208-NoCB	150	161	107	50-150	0.0983	0-20
2051-24-3	LCSD 209-DeCB	150	156	104	50-150	1.13	0-20

## Method Blank Summary

Page 1 of 1

SDG Number: L1736485  
Client ID: MB for batch 36007  
Lab Sample ID: 12019858  
Column:

Client: ALPH001  
Instrument ID: HRP791  
Prep Date: 25-OCT-17

Matrix: SOIL  
Data File: c27oct17a-4  
Analyzed: 10/27/17 18:55

This method blank applies to the following samples and quality control samples:

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Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 36007	12019859	c27oct17a-2	10/27/17	1642
02 LCSD for batch 36007	12019860	c27oct17a-3	10/27/17	1749
VC-IRB-14-ALT- S1	11536001	c27oct17a_3-7	10/28/17	2306
VC-IRB-14-ALT- S2	11536002	c27oct17a_3-8	10/29/17	0013

## Method Blank Summary

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SDG Number: L1736485  
Client ID: MB for batch 36078  
Lab Sample ID: 12019920  
Column:

Client: ALPH001  
Instrument ID: HRP791  
Prep Date: 02-NOV-17

Matrix: SOIL  
Data File: c09nov17a-4  
Analyzed: 11/09/17 15:22

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 36078	12019921	c09nov17a-2	11/09/17	1309
02 LCSD for batch 36078	12019922	c09nov17a-3	11/09/17	1416
03 VC-IRB-15-ALT-S1	11536003	c09nov17a-5	11/09/17	1629
04 VC-IRB-15-ALT-S2	11536004	c10nov17a-3	11/10/17	1137

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

**SDG Number:** L1736485  
**Lab Sample ID:** 12019858  
**Client Sample:** QC for batch 36007  
**Client ID:** MB for batch 36007  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 18:55  
**Data File:** c27oct17a-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 10 g

**Project:** ALPH00217  
**Matrix:** SOIL  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2	pg/g	2.00
2051-61-8	2-MoCB	U	2	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB	U	2	pg/g	2.00
16605-91-7	5-DiCB	U	2	pg/g	2.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	2	pg/g	2.00
34883-43-7	8-DiCB	U	2	pg/g	2.00
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	2	pg/g	2.00
2050-67-1	11-DiCB	U	20	pg/g	20.0
2974-92-7	12-DiCB	CU	4	pg/g	4.00
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2	pg/g	2.00
2050-68-2	15-DiCB	U	2	pg/g	2.00
38444-78-9	16-TrCB	U	2	pg/g	2.00
37680-66-3	17-TrCB	U	2	pg/g	2.00
37680-65-2	18-TrCB	CU	4	pg/g	4.00
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	4	pg/g	4.00
55702-46-0	21-TrCB	CU	4	pg/g	4.00
38444-85-8	22-TrCB	U	2	pg/g	2.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	4	pg/g	4.00
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2	pg/g	2.00
38444-77-8	32-TrCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 2 of 8

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	2	pg/g	2.00
38444-87-0	36-TrCB	U	2	pg/g	2.00
38444-90-5	37-TrCB	U	2	pg/g	2.00
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	2	pg/g	2.00
38444-93-8	40-TeCB	CU	4	pg/g	4.00
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	2	pg/g	2.00
41464-39-5	44-TeCB	CU	6	pg/g	6.00
70362-45-7	45-TeCB	CU	4	pg/g	4.00
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	4	pg/g	4.00
62796-65-0	50-TeCB	CU	4	pg/g	4.00
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	2	pg/g	2.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	6	pg/g	6.00
33025-41-1	60-TeCB	U	2	pg/g	2.00
33284-53-6	61-TeCB	CU	8	pg/g	8.00
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2	pg/g	2.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2	pg/g	2.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2	pg/g	2.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	2	pg/g	2.00
33284-52-5	80-TeCB	U	2	pg/g	2.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	2	pg/g	2.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	6	pg/g	6.00
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4	pg/g	4.00
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	6	pg/g	6.00
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	4	pg/g	4.00
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	2	pg/g	2.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4	pg/g	4.00
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2	pg/g	2.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	2	pg/g	2.00
70362-41-3	108-PeCB	CU	4	pg/g	4.00
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4	pg/g	4.00
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2	pg/g	2.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	4	pg/g	4.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6	pg/g	6.00
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	4	pg/g	4.00
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4	pg/g	4.00
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2	pg/g	2.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	4	pg/g	4.00
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	4	pg/g	4.00
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	4	pg/g	4.00
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736485  
**Lab Sample ID:** 12019858  
**Client Sample:** QC for batch 36007  
**Client ID:** MB for batch 36007  
**Batch ID:** 36009  
**Run Date:** 10/27/2017 18:55  
**Data File:** c27oct17a-4  
**Prep Batch:** 36007  
**Prep Date:** 25-OCT-17

**Client:** ALPH001  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 10 g

**Project:** ALPH00217  
**Matrix:** SOIL  
  
**Prep Basis:** As Received  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	4	pg/g	4.00
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	4	pg/g	4.00
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	4	pg/g	4.00
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	4	pg/g	4.00
68194-17-2	198-OcCB	CU	4	pg/g	4.00
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners	U	2	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		83.1	200	pg/g	41.5	(15%-150%)
13C-3-MoCB		94.3	200	pg/g	47.2	(15%-150%)
13C-4-DiCB		105	200	pg/g	52.3	(25%-150%)
13C-15-DiCB		159	200	pg/g	79.6	(25%-150%)
13C-19-TrCB		139	200	pg/g	69.3	(25%-150%)
13C-37-TrCB		146	200	pg/g	72.8	(25%-150%)
13C-54-TeCB		138	200	pg/g	69.0	(25%-150%)
13C-77-TeCB		157	200	pg/g	78.5	(25%-150%)
13C-81-TeCB		158	200	pg/g	79.0	(25%-150%)
13C-104-PeCB		179	200	pg/g	89.7	(25%-150%)
13C-105-PeCB		144	200	pg/g	72.2	(25%-150%)
13C-114-PeCB		146	200	pg/g	73.0	(25%-150%)
13C-118-PeCB		150	200	pg/g	75.0	(25%-150%)
13C-123-PeCB		156	200	pg/g	77.8	(25%-150%)
13C-126-PeCB		148	200	pg/g	73.9	(25%-150%)
13C-155-HxCB		163	200	pg/g	81.7	(25%-150%)
13C-156-HxCB	C	278	400	pg/g	69.4	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		145	200	pg/g	72.3	(25%-150%)
13C-169-HxCB		138	200	pg/g	69.0	(25%-150%)
13C-188-HpCB		177	200	pg/g	88.4	(25%-150%)
13C-189-HpCB		132	200	pg/g	66.2	(25%-150%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019858		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> MB for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 18:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			173	200	pg/g	86.4 (25%-150%)
13C-205-OcCB			171	200	pg/g	85.4 (25%-150%)
13C-206-NoCB			196	200	pg/g	98.1 (25%-150%)
13C-208-NoCB			175	200	pg/g	87.7 (25%-150%)
13C-209-DeCB			217	200	pg/g	109 (25%-150%)
13C-111-PeCB			158	200	pg/g	79.2 (30%-135%)
13C-28-TrCB			132	200	pg/g	65.9 (30%-135%)
13C-178-HpCB			195	200	pg/g	97.6 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019859		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> LCS for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 16:42	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		49.3	pg/g	2.00
2051-62-9	3-MoCB		52.1	pg/g	2.00
13029-08-8	4-DiCB		48.2	pg/g	2.00
2050-68-2	15-DiCB		59.7	pg/g	2.00
38444-73-4	19-TrCB		48.5	pg/g	2.00
38444-90-5	37-TrCB		51.4	pg/g	2.00
15968-05-5	54-TeCB		92.4	pg/g	2.00
32598-13-3	77-TeCB		97.0	pg/g	2.00
70362-50-4	81-TeCB		106	pg/g	2.00
56558-16-8	104-PeCB		97.2	pg/g	2.00
32598-14-4	105-PeCB		119	pg/g	2.00
74472-37-0	114-PeCB		113	pg/g	2.00
31508-00-6	118-PeCB		104	pg/g	2.00
65510-44-3	123-PeCB		98.6	pg/g	2.00
57465-28-8	126-PeCB		117	pg/g	2.00
33979-03-2	155-HxCB		100	pg/g	2.00
38380-08-4	156-HxCB	C	232	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		117	pg/g	2.00
32774-16-6	169-HxCB		111	pg/g	2.00
74487-85-7	188-HpCB		95.8	pg/g	2.00
39635-31-9	189-HpCB		113	pg/g	2.00
2136-99-4	202-OcCB		147	pg/g	2.00
74472-53-0	205-OcCB		146	pg/g	2.00
40186-72-9	206-NoCB		142	pg/g	2.00
52663-77-1	208-NoCB		154	pg/g	2.00
2051-24-3	209-DeCB		151	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		82.6	200	pg/g	41.3	(15%-140%)
13C-3-MoCB		98.8	200	pg/g	49.4	(15%-140%)
13C-4-DiCB		106	200	pg/g	53.0	(30%-140%)
13C-15-DiCB		166	200	pg/g	82.9	(30%-140%)
13C-19-TrCB		143	200	pg/g	71.3	(30%-140%)
13C-37-TrCB		153	200	pg/g	76.7	(30%-140%)
13C-54-TeCB		141	200	pg/g	70.6	(30%-140%)
13C-77-TeCB		169	200	pg/g	84.6	(30%-140%)
13C-81-TeCB		171	200	pg/g	85.4	(30%-140%)
13C-104-PeCB		180	200	pg/g	89.9	(30%-140%)
13C-105-PeCB		149	200	pg/g	74.3	(30%-140%)
13C-114-PeCB		153	200	pg/g	76.6	(30%-140%)
13C-118-PeCB		157	200	pg/g	78.3	(30%-140%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019859		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> LCS for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 16:42	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-123-PeCB			161	200	pg/g	80.5 (30%-140%)
13C-126-PeCB			157	200	pg/g	78.5 (30%-140%)
13C-155-HxCB			169	200	pg/g	84.3 (30%-140%)
13C-156-HxCB		C	287	400	pg/g	71.8 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			149	200	pg/g	74.5 (30%-140%)
13C-169-HxCB			143	200	pg/g	71.5 (30%-140%)
13C-188-HpCB			184	200	pg/g	92.0 (30%-140%)
13C-189-HpCB			139	200	pg/g	69.5 (30%-140%)
13C-202-OcCB			180	200	pg/g	89.9 (30%-140%)
13C-205-OcCB			178	200	pg/g	88.8 (30%-140%)
13C-206-NoCB			205	200	pg/g	102 (30%-140%)
13C-208-NoCB			183	200	pg/g	91.7 (30%-140%)
13C-209-DeCB			227	200	pg/g	114 (30%-140%)
13C-111-PeCB			167	200	pg/g	83.6 (40%-125%)
13C-28-TrCB			136	200	pg/g	67.8 (40%-125%)
13C-178-HpCB			205	200	pg/g	103 (40%-125%)

**Comments:**

C Congener has coeluters. When Cxxx, refer to congener number xxx for data



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019860		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> LCSD for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 17:49	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		50.1	pg/g	2.00
2051-62-9	3-MoCB		53.3	pg/g	2.00
13029-08-8	4-DiCB		49.2	pg/g	2.00
2050-68-2	15-DiCB		57.5	pg/g	2.00
38444-73-4	19-TrCB		50.9	pg/g	2.00
38444-90-5	37-TrCB		51.3	pg/g	2.00
15968-05-5	54-TeCB		94.3	pg/g	2.00
32598-13-3	77-TeCB		96.5	pg/g	2.00
70362-50-4	81-TeCB		107	pg/g	2.00
56558-16-8	104-PeCB		97.1	pg/g	2.00
32598-14-4	105-PeCB		118	pg/g	2.00
74472-37-0	114-PeCB		112	pg/g	2.00
31508-00-6	118-PeCB		106	pg/g	2.00
65510-44-3	123-PeCB		98.0	pg/g	2.00
57465-28-8	126-PeCB		115	pg/g	2.00
33979-03-2	155-HxCB		105	pg/g	2.00
38380-08-4	156-HxCB	C	233	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		117	pg/g	2.00
32774-16-6	169-HxCB		113	pg/g	2.00
74487-85-7	188-HpCB		95.8	pg/g	2.00
39635-31-9	189-HpCB		111	pg/g	2.00
2136-99-4	202-OcCB		148	pg/g	2.00
74472-53-0	205-OcCB		146	pg/g	2.00
40186-72-9	206-NoCB		141	pg/g	2.00
52663-77-1	208-NoCB		156	pg/g	2.00
2051-24-3	209-DeCB		149	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		84.7	200	pg/g	42.4	(15%-140%)
13C-3-MoCB		98.5	200	pg/g	49.2	(15%-140%)
13C-4-DiCB		108	200	pg/g	53.8	(30%-140%)
13C-15-DiCB		167	200	pg/g	83.5	(30%-140%)
13C-19-TrCB		142	200	pg/g	70.9	(30%-140%)
13C-37-TrCB		164	200	pg/g	81.9	(30%-140%)
13C-54-TeCB		144	200	pg/g	71.9	(30%-140%)
13C-77-TeCB		188	200	pg/g	93.8	(30%-140%)
13C-81-TeCB		185	200	pg/g	92.3	(30%-140%)
13C-104-PeCB		184	200	pg/g	91.8	(30%-140%)
13C-105-PeCB		162	200	pg/g	80.9	(30%-140%)
13C-114-PeCB		165	200	pg/g	82.3	(30%-140%)
13C-118-PeCB		167	200	pg/g	83.5	(30%-140%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019860		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36007		
<b>Client ID:</b> LCSD for batch 36007		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36009	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 10/27/2017 17:49	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c27oct17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36007	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 25-OCT-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-123-PeCB			172	200	pg/g	86.2 (30%-140%)
13C-126-PeCB			172	200	pg/g	85.9 (30%-140%)
13C-155-HxCB			166	200	pg/g	83.1 (30%-140%)
13C-156-HxCB		C	302	400	pg/g	75.6 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			156	200	pg/g	78.1 (30%-140%)
13C-169-HxCB			155	200	pg/g	77.4 (30%-140%)
13C-188-HpCB			184	200	pg/g	91.8 (30%-140%)
13C-189-HpCB			147	200	pg/g	73.3 (30%-140%)
13C-202-OcCB			184	200	pg/g	91.9 (30%-140%)
13C-205-OcCB			183	200	pg/g	91.4 (30%-140%)
13C-206-NoCB			208	200	pg/g	104 (30%-140%)
13C-208-NoCB			184	200	pg/g	92.0 (30%-140%)
13C-209-DeCB			231	200	pg/g	115 (30%-140%)
13C-111-PeCB			174	200	pg/g	87.1 (40%-125%)
13C-28-TrCB			138	200	pg/g	68.8 (40%-125%)
13C-178-HpCB			204	200	pg/g	102 (40%-125%)

**Comments:**  
**C Congener has coeluters. When Cxxx, refer to congener number xxx for data**

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 1 of 8

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2	pg/g	2.00
2051-61-8	2-MoCB	U	2	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB		2.44	pg/g	2.00
16605-91-7	5-DiCB	U	2	pg/g	2.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	2	pg/g	2.00
34883-43-7	8-DiCB	U	2	pg/g	2.00
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	2	pg/g	2.00
2050-67-1	11-DiCB	U	20	pg/g	20.0
2974-92-7	12-DiCB	CU	4	pg/g	4.00
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2	pg/g	2.00
2050-68-2	15-DiCB	U	2	pg/g	2.00
38444-78-9	16-TrCB	U	2	pg/g	2.00
37680-66-3	17-TrCB	U	2	pg/g	2.00
37680-65-2	18-TrCB	CU	4	pg/g	4.00
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	4	pg/g	4.00
55702-46-0	21-TrCB	CU	4	pg/g	4.00
38444-85-8	22-TrCB	U	2	pg/g	2.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	4	pg/g	4.00
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2	pg/g	2.00
38444-77-8	32-TrCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	2	pg/g	2.00
38444-87-0	36-TrCB	U	2	pg/g	2.00
38444-90-5	37-TrCB	U	2	pg/g	2.00
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	2	pg/g	2.00
38444-93-8	40-TeCB	CU	4	pg/g	4.00
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	2	pg/g	2.00
41464-39-5	44-TeCB	CU	6	pg/g	6.00
70362-45-7	45-TeCB	CU	4	pg/g	4.00
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	4	pg/g	4.00
62796-65-0	50-TeCB	CU	4	pg/g	4.00
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	2	pg/g	2.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	6	pg/g	6.00
33025-41-1	60-TeCB	U	2	pg/g	2.00
33284-53-6	61-TeCB	CU	8	pg/g	8.00
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2	pg/g	2.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2	pg/g	2.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2	pg/g	2.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	2	pg/g	2.00
33284-52-5	80-TeCB	U	2	pg/g	2.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	2	pg/g	2.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	6	pg/g	6.00
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4	pg/g	4.00
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	6	pg/g	6.00
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	4	pg/g	4.00
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	2	pg/g	2.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4	pg/g	4.00
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2	pg/g	2.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	2	pg/g	2.00
70362-41-3	108-PeCB	CU	4	pg/g	4.00
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4	pg/g	4.00
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2	pg/g	2.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	4	pg/g	4.00

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6	pg/g	6.00
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	4	pg/g	4.00
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4	pg/g	4.00
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2	pg/g	2.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	4	pg/g	4.00
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	4	pg/g	4.00
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	4	pg/g	4.00
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	4	pg/g	4.00
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	4	pg/g	4.00
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	4	pg/g	4.00
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	4	pg/g	4.00
68194-17-2	198-OcCB	CU	4	pg/g	4.00
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners		2.44	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		20.5	200	pg/g	10.3 *	(15%-150%)
13C-3-MoCB		58.4	200	pg/g	29.2	(15%-150%)
13C-4-DiCB		44.0	200	pg/g	22.0 *	(25%-150%)
13C-15-DiCB		188	200	pg/g	93.9	(25%-150%)
13C-19-TrCB		92.2	200	pg/g	46.1	(25%-150%)
13C-37-TrCB		141	200	pg/g	70.6	(25%-150%)
13C-54-TeCB		74.6	200	pg/g	37.3	(25%-150%)
13C-77-TeCB		198	200	pg/g	98.9	(25%-150%)
13C-81-TeCB		193	200	pg/g	96.3	(25%-150%)
13C-104-PeCB		138	200	pg/g	69.1	(25%-150%)
13C-105-PeCB		155	200	pg/g	77.4	(25%-150%)
13C-114-PeCB		155	200	pg/g	77.6	(25%-150%)
13C-118-PeCB		158	200	pg/g	79.2	(25%-150%)
13C-123-PeCB		162	200	pg/g	81.0	(25%-150%)
13C-126-PeCB		157	200	pg/g	78.6	(25%-150%)
13C-155-HxCB		151	200	pg/g	75.4	(25%-150%)
13C-156-HxCB	C	296	400	pg/g	74.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		154	200	pg/g	76.8	(25%-150%)
13C-169-HxCB		135	200	pg/g	67.7	(25%-150%)
13C-188-HpCB		197	200	pg/g	98.5	(25%-150%)
13C-189-HpCB		150	200	pg/g	75.0	(25%-150%)

**PCB Congeners  
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Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-202-OcCB			189	200	pg/g	94.7 (25%-150%)
13C-205-OcCB			171	200	pg/g	85.5 (25%-150%)
13C-206-NoCB			169	200	pg/g	84.4 (25%-150%)
13C-208-NoCB			154	200	pg/g	76.9 (25%-150%)
13C-209-DeCB			153	200	pg/g	76.4 (25%-150%)
13C-111-PeCB			163	200	pg/g	81.4 (30%-135%)
13C-28-TrCB			109	200	pg/g	54.6 (30%-135%)
13C-178-HpCB			161	200	pg/g	80.3 (30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019921		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> LCS for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 13:09	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		66.1	pg/g	2.00
2051-62-9	3-MoCB		60.5	pg/g	2.00
13029-08-8	4-DiCB		63.4	pg/g	2.00
2050-68-2	15-DiCB		60.8	pg/g	2.00
38444-73-4	19-TrCB		56.7	pg/g	2.00
38444-90-5	37-TrCB		49.9	pg/g	2.00
15968-05-5	54-TeCB		102	pg/g	2.00
32598-13-3	77-TeCB		97.1	pg/g	2.00
70362-50-4	81-TeCB		105	pg/g	2.00
56558-16-8	104-PeCB		101	pg/g	2.00
32598-14-4	105-PeCB		115	pg/g	2.00
74472-37-0	114-PeCB		112	pg/g	2.00
31508-00-6	118-PeCB		108	pg/g	2.00
65510-44-3	123-PeCB		102	pg/g	2.00
57465-28-8	126-PeCB		117	pg/g	2.00
33979-03-2	155-HxCB		102	pg/g	2.00
38380-08-4	156-HxCB	C	234	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		120	pg/g	2.00
32774-16-6	169-HxCB		113	pg/g	2.00
74487-85-7	188-HpCB		99.6	pg/g	2.00
39635-31-9	189-HpCB		112	pg/g	2.00
2136-99-4	202-OcCB		154	pg/g	2.00
74472-53-0	205-OcCB		150	pg/g	2.00
40186-72-9	206-NoCB		147	pg/g	2.00
52663-77-1	208-NoCB		161	pg/g	2.00
2051-24-3	209-DeCB		154	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		31.1	200	pg/g	15.5	(15%-140%)
13C-3-MoCB		55.0	200	pg/g	27.5	(15%-140%)
13C-4-DiCB		48.7	200	pg/g	24.4 *	(30%-140%)
13C-15-DiCB		183	200	pg/g	91.5	(30%-140%)
13C-19-TrCB		96.0	200	pg/g	48.0	(30%-140%)
13C-37-TrCB		155	200	pg/g	77.3	(30%-140%)
13C-54-TeCB		82.6	200	pg/g	41.3	(30%-140%)
13C-77-TeCB		200	200	pg/g	100	(30%-140%)
13C-81-TeCB		197	200	pg/g	98.5	(30%-140%)
13C-104-PeCB		139	200	pg/g	69.3	(30%-140%)
13C-105-PeCB		156	200	pg/g	77.8	(30%-140%)
13C-114-PeCB		157	200	pg/g	78.5	(30%-140%)
13C-118-PeCB		161	200	pg/g	80.3	(30%-140%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019921		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> LCS for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 13:09	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL	
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-123-PeCB			164	200	pg/g	82.2 (30%-140%)
13C-126-PeCB			158	200	pg/g	78.8 (30%-140%)
13C-155-HxCB			153	200	pg/g	76.7 (30%-140%)
13C-156-HxCB		C	297	400	pg/g	74.3 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			153	200	pg/g	76.7 (30%-140%)
13C-169-HxCB			136	200	pg/g	67.8 (30%-140%)
13C-188-HpCB			204	200	pg/g	102 (30%-140%)
13C-189-HpCB			156	200	pg/g	77.9 (30%-140%)
13C-202-OcCB			189	200	pg/g	94.7 (30%-140%)
13C-205-OcCB			175	200	pg/g	87.3 (30%-140%)
13C-206-NoCB			175	200	pg/g	87.3 (30%-140%)
13C-208-NoCB			159	200	pg/g	79.4 (30%-140%)
13C-209-DeCB			167	200	pg/g	83.5 (30%-140%)
13C-111-PeCB			163	200	pg/g	81.6 (40%-125%)
13C-28-TrCB			104	200	pg/g	52.2 (40%-125%)
13C-178-HpCB			172	200	pg/g	86.0 (40%-125%)

**Comments:**  
 C Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019922		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> LCSD for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 14:16	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		33.0	pg/g	2.00
2051-62-9	3-MoCB		42.5	pg/g	2.00
13029-08-8	4-DiCB		40.0	pg/g	2.00
2050-68-2	15-DiCB		57.3	pg/g	2.00
38444-73-4	19-TrCB		47.0	pg/g	2.00
38444-90-5	37-TrCB		47.9	pg/g	2.00
15968-05-5	54-TeCB		93.7	pg/g	2.00
32598-13-3	77-TeCB		96.1	pg/g	2.00
70362-50-4	81-TeCB		105	pg/g	2.00
56558-16-8	104-PeCB		97.0	pg/g	2.00
32598-14-4	105-PeCB		115	pg/g	2.00
74472-37-0	114-PeCB		110	pg/g	2.00
31508-00-6	118-PeCB		107	pg/g	2.00
65510-44-3	123-PeCB		99.3	pg/g	2.00
57465-28-8	126-PeCB		114	pg/g	2.00
33979-03-2	155-HxCB		96.8	pg/g	2.00
38380-08-4	156-HxCB	C	233	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		118	pg/g	2.00
32774-16-6	169-HxCB		114	pg/g	2.00
74487-85-7	188-HpCB		99.2	pg/g	2.00
39635-31-9	189-HpCB		113	pg/g	2.00
2136-99-4	202-OcCB		154	pg/g	2.00
74472-53-0	205-OcCB		151	pg/g	2.00
40186-72-9	206-NoCB		147	pg/g	2.00
52663-77-1	208-NoCB		161	pg/g	2.00
2051-24-3	209-DeCB		156	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		29.3	200	pg/g	14.6 *	(15%-140%)
13C-3-MoCB		57.4	200	pg/g	28.7	(15%-140%)
13C-4-DiCB		54.0	200	pg/g	27.0 *	(30%-140%)
13C-15-DiCB		185	200	pg/g	92.7	(30%-140%)
13C-19-TrCB		96.4	200	pg/g	48.2	(30%-140%)
13C-37-TrCB		156	200	pg/g	78.0	(30%-140%)
13C-54-TeCB		84.6	200	pg/g	42.3	(30%-140%)
13C-77-TeCB		211	200	pg/g	105	(30%-140%)
13C-81-TeCB		209	200	pg/g	105	(30%-140%)
13C-104-PeCB		140	200	pg/g	69.9	(30%-140%)
13C-105-PeCB		156	200	pg/g	77.8	(30%-140%)
13C-114-PeCB		157	200	pg/g	78.6	(30%-140%)
13C-118-PeCB		162	200	pg/g	81.0	(30%-140%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736485	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019922		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> LCSD for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 14:16	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-123-PeCB			164	200	pg/g	82.1 (30%-140%)
13C-126-PeCB			158	200	pg/g	79.1 (30%-140%)
13C-155-HxCB			158	200	pg/g	78.8 (30%-140%)
13C-156-HxCB		C	298	400	pg/g	74.6 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			155	200	pg/g	77.3 (30%-140%)
13C-169-HxCB			139	200	pg/g	69.4 (30%-140%)
13C-188-HpCB			204	200	pg/g	102 (30%-140%)
13C-189-HpCB			153	200	pg/g	76.6 (30%-140%)
13C-202-OcCB			192	200	pg/g	96.0 (30%-140%)
13C-205-OcCB			175	200	pg/g	87.4 (30%-140%)
13C-206-NoCB			174	200	pg/g	86.8 (30%-140%)
13C-208-NoCB			159	200	pg/g	79.3 (30%-140%)
13C-209-DeCB			162	200	pg/g	81.1 (30%-140%)
13C-111-PeCB			163	200	pg/g	81.5 (40%-125%)
13C-28-TrCB			108	200	pg/g	54.1 (40%-125%)
13C-178-HpCB			169	200	pg/g	84.6 (40%-125%)

**Comments:**  
C Congener has coeluters. When Cxxx, refer to congener number xxx for data



## ANALYTICAL REPORT

Lab Number:	L1736603
Client:	ESS Group, Inc. 100 Fifth Avenue 5th Floor Waltham, MA 02451
ATTN:	Michael Phillips
Phone:	(781) 419-7718
Project Name:	US WIND
Project Number:	U167-022
Report Date:	11/15/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1736603-01	VC-IRB-11-ALT-S1	SEDIMENT	DELAWARE	10/10/17 15:40	10/11/17
L1736603-02	VC-IRB-11-ALT-S2	SEDIMENT	DELAWARE	10/10/17 15:50	10/11/17
L1736603-03	VC-IRB-24-S1	SEDIMENT	DELAWARE	10/10/17 14:45	10/11/17
L1736603-04	VC-IRB-24-S2	SEDIMENT	DELAWARE	10/10/17 14:55	10/11/17
L1736603-05	VC-IRB-13-ALT-S1	SEDIMENT	DELAWARE	10/10/17 19:15	10/11/17
L1736603-06	VC-IRB-13-ALT-S2	SEDIMENT	DELAWARE	10/10/17 19:25	10/11/17



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

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**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

### Case Narrative (continued)

#### Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analysis of PCB Congeners and Dioxin/Furan was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt

L1736603 was frozen upon receipt in order to arrest the holding time.

#### PAHs by SIM

The WG1060110-1 Method Blank, associated with L1736603-01 through -06, has concentrations above the reporting limits for Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, and Benzo(g,h,i)perylene. Since the sample(s) were non-detect to the RL for these target analytes, no further actions were taken. The results of the original analysis are reported.

#### Total Metals

The CCV recovery associated with L1736603-01,05 was above the acceptance criteria for Beryllium. Any associated samples with positive detections were re-analyzed under a passing CCV. The samples that were non-detect for these elements are reporting results from the original analyses.

#### Phosphorus, Total

WG1053383-1: A Matrix Spike and Laboratory Duplicate were prepared with the sample batch, however, the native sample was not available for reporting; therefore, the Matrix Spike and Laboratory Duplicate results could not be reported.

#### Grain Size Analysis

The WG1059963-1 Laboratory Duplicate RPD for % Clay fine (133%), performed on L1736603-01, is outside

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**Case Narrative (continued)**

the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Elizabeth Porta

Title: Technical Director/Representative

Date: 11/15/17

# ORGANICS

# SEMIVOLATILES

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-01  
 Client ID: VC-IRB-11-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/07/17 23:47  
 Analyst: GP  
 Percent Solids: 78%

Date Collected: 10/10/17 15:40  
 Date Received: 10/11/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Naphthalene	2.37	J	ug/kg	8.74	0.782	1
Acenaphthylene	ND		ug/kg	8.74	0.586	1
Acenaphthene	ND		ug/kg	8.74	0.979	1
Fluorene	ND		ug/kg	8.74	0.584	1
Phenanthrene	1.05	J	ug/kg	8.74	1.03	1
Anthracene	ND		ug/kg	8.74	1.08	1
Fluoranthene	ND		ug/kg	8.74	1.60	1
Pyrene	ND		ug/kg	8.74	0.892	1
Benz(a)anthracene	ND		ug/kg	8.74	2.33	1
Chrysene	ND		ug/kg	8.74	0.768	1
Benzo(b)fluoranthene	ND		ug/kg	8.74	0.909	1
Benzo(k)fluoranthene	ND		ug/kg	8.74	0.901	1
Benzo(a)pyrene	ND		ug/kg	8.74	1.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.74	2.49	1
Dibenz(a,h)anthracene	ND		ug/kg	8.74	0.901	1
Benzo(g,h,i)perylene	ND		ug/kg	8.74	0.720	1
2-Methylnaphthalene	ND		ug/kg	8.74	1.08	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	46		30-130
Pyrene-d10	70		30-130
Benzo(b)fluoranthene-d12	75		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-02  
 Client ID: VC-IRB-11-ALT-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/08/17 00:17  
 Analyst: GP  
 Percent Solids: 48%

Date Collected: 10/10/17 15:50  
 Date Received: 10/11/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	2.25	J	ug/kg	7.74	0.693	1
Acenaphthylene	ND		ug/kg	7.74	0.519	1
Acenaphthene	ND		ug/kg	7.74	0.867	1
Fluorene	1.94	J	ug/kg	7.74	0.517	1
Phenanthrene	2.51	J	ug/kg	7.74	0.914	1
Anthracene	ND		ug/kg	7.74	0.960	1
Fluoranthene	2.86	J	ug/kg	7.74	1.42	1
Pyrene	3.00	J	ug/kg	7.74	0.790	1
Benz(a)anthracene	ND		ug/kg	7.74	2.07	1
Chrysene	1.12	J	ug/kg	7.74	0.681	1
Benzo(b)fluoranthene	ND		ug/kg	7.74	0.805	1
Benzo(k)fluoranthene	ND		ug/kg	7.74	0.798	1
Benzo(a)pyrene	ND		ug/kg	7.74	0.906	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	7.74	2.21	1
Dibenz(a,h)anthracene	ND		ug/kg	7.74	0.798	1
Benzo(g,h,i)perylene	ND		ug/kg	7.74	0.638	1
2-Methylnaphthalene	ND		ug/kg	7.74	0.960	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	60		30-130
Pyrene-d10	74		30-130
Benzo(b)fluoranthene-d12	75		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-03  
 Client ID: VC-IRB-24-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/08/17 00:48  
 Analyst: GP  
 Percent Solids: 45%

Date Collected: 10/10/17 14:45  
 Date Received: 10/11/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Naphthalene	2.51	J	ug/kg	8.73	0.782	1
Acenaphthylene	ND		ug/kg	8.73	0.585	1
Acenaphthene	ND		ug/kg	8.73	0.978	1
Fluorene	1.56	J	ug/kg	8.73	0.583	1
Phenanthrene	2.14	J	ug/kg	8.73	1.03	1
Anthracene	ND		ug/kg	8.73	1.08	1
Fluoranthene	2.97	J	ug/kg	8.73	1.60	1
Pyrene	3.41	J	ug/kg	8.73	0.891	1
Benz(a)anthracene	ND		ug/kg	8.73	2.33	1
Chrysene	1.46	J	ug/kg	8.73	0.768	1
Benzo(b)fluoranthene	1.70	J	ug/kg	8.73	0.908	1
Benzo(k)fluoranthene	1.04	J	ug/kg	8.73	0.900	1
Benzo(a)pyrene	ND		ug/kg	8.73	1.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.73	2.49	1
Dibenz(a,h)anthracene	ND		ug/kg	8.73	0.900	1
Benzo(g,h,i)perylene	ND		ug/kg	8.73	0.720	1
2-Methylnaphthalene	ND		ug/kg	8.73	1.08	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	58		30-130
Pyrene-d10	82		30-130
Benzo(b)fluoranthene-d12	86		30-130



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-04  
 Client ID: VC-IRB-24-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/08/17 01:18  
 Analyst: GP  
 Percent Solids: 33%

Date Collected: 10/10/17 14:55  
 Date Received: 10/11/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	5.53	J	ug/kg	11.8	1.05	1
Acenaphthylene	ND		ug/kg	11.8	0.787	1
Acenaphthene	ND		ug/kg	11.8	1.32	1
Fluorene	1.87	J	ug/kg	11.8	0.785	1
Phenanthrene	5.11	J	ug/kg	11.8	1.39	1
Anthracene	ND		ug/kg	11.8	1.46	1
Fluoranthene	2.78	J	ug/kg	11.8	2.15	1
Pyrene	3.14	J	ug/kg	11.8	1.20	1
Benz(a)anthracene	ND		ug/kg	11.8	3.14	1
Chrysene	ND		ug/kg	11.8	1.03	1
Benzo(b)fluoranthene	ND		ug/kg	11.8	1.22	1
Benzo(k)fluoranthene	ND		ug/kg	11.8	1.21	1
Benzo(a)pyrene	ND		ug/kg	11.8	1.38	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	11.8	3.35	1
Dibenz(a,h)anthracene	ND		ug/kg	11.8	1.21	1
Benzo(g,h,i)perylene	ND		ug/kg	11.8	0.968	1
2-Methylnaphthalene	1.51	J	ug/kg	11.8	1.46	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	48		30-130
Pyrene-d10	62		30-130
Benzo(b)fluoranthene-d12	61		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-05  
 Client ID: VC-IRB-13-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/08/17 01:48  
 Analyst: GP  
 Percent Solids: 80%

Date Collected: 10/10/17 19:15  
 Date Received: 10/11/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	1.66	J	ug/kg	9.09	0.813	1
Acenaphthylene	ND		ug/kg	9.09	0.609	1
Acenaphthene	ND		ug/kg	9.09	1.02	1
Fluorene	ND		ug/kg	9.09	0.607	1
Phenanthrene	ND		ug/kg	9.09	1.07	1
Anthracene	ND		ug/kg	9.09	1.13	1
Fluoranthene	ND		ug/kg	9.09	1.66	1
Pyrene	ND		ug/kg	9.09	0.927	1
Benzo(a)anthracene	ND		ug/kg	9.09	2.43	1
Chrysene	ND		ug/kg	9.09	0.799	1
Benzo(b)fluoranthene	ND		ug/kg	9.09	0.945	1
Benzo(k)fluoranthene	ND		ug/kg	9.09	0.936	1
Benzo(a)pyrene	ND		ug/kg	9.09	1.06	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	9.09	2.59	1
Dibenz(a,h)anthracene	ND		ug/kg	9.09	0.936	1
Benzo(g,h,i)perylene	ND		ug/kg	9.09	0.749	1
2-Methylnaphthalene	1.34	J	ug/kg	9.09	1.13	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	61		30-130
Pyrene-d10	81		30-130
Benzo(b)fluoranthene-d12	86		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-06  
 Client ID: VC-IRB-13-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/10/17 19:25  
 Date Received: 10/11/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Matrix: Sediment  
 Analytical Method: 1,8270D-SIM  
 Analytical Date: 11/08/17 02:18  
 Analyst: GP  
 Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PAHs by GC/MS-SIM - Mansfield Lab</b>						
Naphthalene	1.41	J	ug/kg	5.87	0.525	1
Acenaphthylene	ND		ug/kg	5.87	0.393	1
Acenaphthene	ND		ug/kg	5.87	0.657	1
Fluorene	ND		ug/kg	5.87	0.392	1
Phenanthrene	0.820	J	ug/kg	5.87	0.693	1
Anthracene	ND		ug/kg	5.87	0.728	1
Fluoranthene	ND		ug/kg	5.87	1.07	1
Pyrene	ND		ug/kg	5.87	0.599	1
Benz(a)anthracene	ND		ug/kg	5.87	1.57	1
Chrysene	ND		ug/kg	5.87	0.516	1
Benzo(b)fluoranthene	ND		ug/kg	5.87	0.610	1
Benzo(k)fluoranthene	ND		ug/kg	5.87	0.605	1
Benzo(a)pyrene	ND		ug/kg	5.87	0.687	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	5.87	1.67	1
Dibenz(a,h)anthracene	ND		ug/kg	5.87	0.605	1
Benzo(g,h,i)perylene	ND		ug/kg	5.87	0.484	1
2-Methylnaphthalene	ND		ug/kg	5.87	0.728	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	61		30-130
Pyrene-d10	77		30-130
Benzo(b)fluoranthene-d12	77		30-130

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8270D-SIM  
**Analytical Date:** 11/07/17 19:13  
**Analyst:** GP

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 18:15  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL
PAHs by GC/MS-SIM - Mansfield Lab for sample(s): 01-06 Batch: WG1060110-1					
Naphthalene	1.47	J	ug/kg	4.00	0.358
Acenaphthylene	ND		ug/kg	4.00	0.268
Acenaphthene	ND		ug/kg	4.00	0.448
Fluorene	ND		ug/kg	4.00	0.267
Phenanthrene	0.540	J	ug/kg	4.00	0.472
Anthracene	ND		ug/kg	4.00	0.496
Fluoranthene	ND		ug/kg	4.00	0.732
Pyrene	ND		ug/kg	4.00	0.408
Benz(a)anthracene	ND		ug/kg	4.00	1.07
Chrysene	ND		ug/kg	4.00	0.352
Benzo(b)fluoranthene	1.35	J	ug/kg	4.00	0.416
Benzo(k)fluoranthene	ND		ug/kg	4.00	0.412
Benzo(a)pyrene	0.497	J	ug/kg	4.00	0.468
Indeno(1,2,3-cd)pyrene	6.27		ug/kg	4.00	1.14
Dibenz(a,h)anthracene	4.96		ug/kg	4.00	0.412
Benzo(g,h,i)perylene	5.02		ug/kg	4.00	0.330
2-Methylnaphthalene	0.542	J	ug/kg	4.00	0.496

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	66		30-130
Pyrene-d10	81		30-130
Benzo(b)fluoranthene-d12	88		30-130



## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736603

Report Date: 11/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-06 Batch: WG1060110-2 WG1060110-3								
Naphthalene	57		54		40-140	5		30
Acenaphthylene	68		64		40-140	6		30
Acenaphthene	52		50		40-140	4		30
Fluorene	70		67		40-140	4		30
Phenanthrene	73		72		40-140	1		30
Anthracene	77		77		40-140	0		30
Fluoranthene	77		78		40-140	1		30
Pyrene	71		70		40-140	1		30
Benz(a)anthracene	81		83		40-140	2		30
Chrysene	78		83		40-140	6		30
Benzo(b)fluoranthene	86		90		40-140	5		30
Benzo(k)fluoranthene	77		82		40-140	6		30
Benzo(a)pyrene	83		86		40-140	4		30
Indeno(1,2,3-cd)pyrene	92		79		40-140	15		30
Dibenz(a,h)anthracene	86		84		40-140	2		30
Benzo(g,h,i)perylene	87		79		40-140	10		30
2-Methylnaphthalene	65		62		40-140	5		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736603

Report Date: 11/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-06 Batch: WG1060110-2 WG1060110-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Methylnaphthalene-d10	63		58		30-130
Pyrene-d10	79		77		30-130
Benzo(b)fluoranthene-d12	83		85		30-130

# PESTICIDES

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-01  
 Client ID: VC-IRB-11-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/10/17 15:40  
 Date Received: 10/11/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/08/17 17:42  
 Analyst: DP  
 Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.439	0.439	1	A
Hexachlorobenzene	ND		ug/kg	0.877	0.877	1	A
beta-BHC	ND		ug/kg	0.439	0.439	1	A
gamma-BHC	ND		ug/kg	0.439	0.439	1	A
delta-BHC	ND		ug/kg	0.439	0.439	1	A
Heptachlor	ND		ug/kg	0.439	0.439	1	A
Aldrin	ND		ug/kg	0.439	0.439	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.877	0.877	1	B
Oxychlordane	ND		ug/kg	0.877	0.877	1	B
gamma-Chlordane	ND		ug/kg	0.439	0.439	1	A
2,4'-DDE	ND		ug/kg	0.439	0.439	1	A
Endosulfan I	ND		ug/kg	0.439	0.439	1	A
alpha-Chlordane	ND		ug/kg	0.439	0.439	1	A
trans-Nonachlor	ND		ug/kg	0.439	0.439	1	A
4,4'-DDE	ND		ug/kg	0.439	0.439	1	A
Dieldrin	ND		ug/kg	0.439	0.439	1	A
2,4'-DDD	ND		ug/kg	0.439	0.439	1	A
Endrin	ND		ug/kg	0.439	0.439	1	A
Endosulfan II	ND		ug/kg	0.439	0.439	1	A
4,4'-DDD	ND		ug/kg	0.439	0.439	1	A
2,4'-DDT	ND		ug/kg	0.439	0.439	1	A
cis-Nonachlor	ND		ug/kg	0.439	0.439	1	A
Endrin aldehyde	ND		ug/kg	1.32	1.32	1	A
Endosulfan sulfate	ND		ug/kg	0.439	0.439	1	A
4,4'-DDT	ND		ug/kg	0.439	0.439	1	A
Endrin ketone	ND		ug/kg	0.439	0.439	1	A
Methoxychlor	ND		ug/kg	4.39	4.39	1	A
Mirex	ND		ug/kg	0.439	0.439	1	A
Toxaphene	ND		ug/kg	22.0	22.0	1	A
Chlordane	ND		ug/kg	22.0	22.0	1	A



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-01  
 Client ID: VC-IRB-11-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/10/17 15:40  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	61		30-150	A
DCB - Surrogate	71		30-150	A
TMX - Surrogate	54		30-150	B
DCB - Surrogate	65		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-02  
 Client ID: VC-IRB-11-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/10/17 15:50  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/08/17 18:15  
 Analyst: DP  
 Percent Solids: 48%

Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.390	0.390	1	A
Hexachlorobenzene	ND		ug/kg	0.781	0.781	1	A
beta-BHC	ND		ug/kg	0.390	0.390	1	A
gamma-BHC	ND		ug/kg	0.390	0.390	1	A
delta-BHC	ND		ug/kg	0.390	0.390	1	A
Heptachlor	ND		ug/kg	0.390	0.390	1	A
Aldrin	ND		ug/kg	0.390	0.390	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.781	0.781	1	B
Oxychlordane	ND		ug/kg	0.781	0.781	1	B
gamma-Chlordane	ND		ug/kg	0.390	0.390	1	A
2,4'-DDE	ND		ug/kg	0.390	0.390	1	A
Endosulfan I	ND		ug/kg	0.390	0.390	1	A
alpha-Chlordane	ND		ug/kg	0.390	0.390	1	A
trans-Nonachlor	ND		ug/kg	0.390	0.390	1	A
4,4'-DDE	ND		ug/kg	0.390	0.390	1	A
Dieldrin	ND		ug/kg	0.390	0.390	1	A
2,4'-DDD	ND		ug/kg	0.390	0.390	1	A
Endrin	ND		ug/kg	0.390	0.390	1	A
Endosulfan II	ND		ug/kg	0.390	0.390	1	A
4,4'-DDD	ND		ug/kg	0.390	0.390	1	A
2,4'-DDT	ND		ug/kg	0.390	0.390	1	A
cis-Nonachlor	ND		ug/kg	0.390	0.390	1	A
Endrin aldehyde	ND		ug/kg	1.17	1.17	1	A
Endosulfan sulfate	ND		ug/kg	0.390	0.390	1	A
4,4'-DDT	ND		ug/kg	0.390	0.390	1	A
Endrin ketone	ND		ug/kg	0.390	0.390	1	A
Methoxychlor	ND		ug/kg	3.90	3.90	1	A
Mirex	ND		ug/kg	0.390	0.390	1	A
Toxaphene	ND		ug/kg	19.6	19.6	1	A
Chlordane	ND		ug/kg	19.6	19.6	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-02  
 Client ID: VC-IRB-11-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/10/17 15:50  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	60		30-150	A
DCB - Surrogate	70		30-150	A
TMX - Surrogate	53		30-150	B
DCB - Surrogate	65		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-03  
 Client ID: VC-IRB-24-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/08/17 18:47  
 Analyst: DP  
 Percent Solids: 45%

Date Collected: 10/10/17 14:45  
 Date Received: 10/11/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.439	0.439	1	A
Hexachlorobenzene	ND		ug/kg	0.878	0.878	1	A
beta-BHC	ND		ug/kg	0.439	0.439	1	A
gamma-BHC	ND		ug/kg	0.439	0.439	1	A
delta-BHC	ND		ug/kg	0.439	0.439	1	A
Heptachlor	ND		ug/kg	0.439	0.439	1	A
Aldrin	ND		ug/kg	0.439	0.439	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.878	0.878	1	B
Oxychlordane	ND		ug/kg	0.878	0.878	1	B
gamma-Chlordane	ND		ug/kg	0.439	0.439	1	A
2,4'-DDE	ND		ug/kg	0.439	0.439	1	A
Endosulfan I	ND		ug/kg	0.439	0.439	1	A
alpha-Chlordane	ND		ug/kg	0.439	0.439	1	A
trans-Nonachlor	ND		ug/kg	0.439	0.439	1	A
4,4'-DDE	ND		ug/kg	0.439	0.439	1	A
Dieldrin	ND		ug/kg	0.439	0.439	1	A
2,4'-DDD	ND		ug/kg	0.439	0.439	1	A
Endrin	ND		ug/kg	0.439	0.439	1	A
Endosulfan II	ND		ug/kg	0.439	0.439	1	A
4,4'-DDD	ND		ug/kg	0.439	0.439	1	A
2,4'-DDT	ND		ug/kg	0.439	0.439	1	A
cis-Nonachlor	ND		ug/kg	0.439	0.439	1	A
Endrin aldehyde	ND		ug/kg	1.32	1.32	1	A
Endosulfan sulfate	ND		ug/kg	0.439	0.439	1	A
4,4'-DDT	ND		ug/kg	0.439	0.439	1	A
Endrin ketone	ND		ug/kg	0.439	0.439	1	A
Methoxychlor	ND		ug/kg	4.39	4.39	1	A
Mirex	ND		ug/kg	0.439	0.439	1	A
Toxaphene	ND		ug/kg	22.0	22.0	1	A
Chlordane	ND		ug/kg	22.0	22.0	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-03  
 Client ID: VC-IRB-24-S1  
 Sample Location: DELAWARE

Date Collected: 10/10/17 14:45  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	69		30-150	A
DCB - Surrogate	65		30-150	A
TMX - Surrogate	59		30-150	B
DCB - Surrogate	61		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-04  
 Client ID: VC-IRB-24-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/08/17 19:19  
 Analyst: DP  
 Percent Solids: 33%

Date Collected: 10/10/17 14:55  
 Date Received: 10/11/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.561	0.561	1	A
Hexachlorobenzene	ND		ug/kg	1.12	1.12	1	A
beta-BHC	ND		ug/kg	0.561	0.561	1	A
gamma-BHC	ND		ug/kg	0.561	0.561	1	A
delta-BHC	ND		ug/kg	0.561	0.561	1	A
Heptachlor	ND		ug/kg	0.561	0.561	1	A
Aldrin	ND		ug/kg	0.561	0.561	1	A
Heptachlor epoxide (B)	ND		ug/kg	1.12	1.12	1	B
Oxychlordane	ND		ug/kg	1.12	1.12	1	B
gamma-Chlordane	ND		ug/kg	0.561	0.561	1	A
2,4'-DDE	ND		ug/kg	0.561	0.561	1	A
Endosulfan I	ND		ug/kg	0.561	0.561	1	A
alpha-Chlordane	ND		ug/kg	0.561	0.561	1	A
trans-Nonachlor	ND		ug/kg	0.561	0.561	1	A
4,4'-DDE	ND		ug/kg	0.561	0.561	1	A
Dieldrin	ND		ug/kg	0.561	0.561	1	A
2,4'-DDD	ND		ug/kg	0.561	0.561	1	A
Endrin	ND		ug/kg	0.561	0.561	1	A
Endosulfan II	ND		ug/kg	0.561	0.561	1	A
4,4'-DDD	ND		ug/kg	0.561	0.561	1	A
2,4'-DDT	ND		ug/kg	0.561	0.561	1	A
cis-Nonachlor	ND		ug/kg	0.561	0.561	1	A
Endrin aldehyde	ND		ug/kg	1.68	1.68	1	A
Endosulfan sulfate	ND		ug/kg	0.561	0.561	1	A
4,4'-DDT	ND		ug/kg	0.561	0.561	1	A
Endrin ketone	ND		ug/kg	0.561	0.561	1	A
Methoxychlor	ND		ug/kg	5.61	5.61	1	A
Mirex	ND		ug/kg	0.561	0.561	1	A
Toxaphene	ND		ug/kg	28.2	28.2	1	A
Chlordane	ND		ug/kg	28.2	28.2	1	A

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-04  
 Client ID: VC-IRB-24-S2  
 Sample Location: DELAWARE

Date Collected: 10/10/17 14:55  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	64		30-150	A
DCB - Surrogate	74		30-150	A
TMX - Surrogate	56		30-150	B
DCB - Surrogate	70		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-05  
 Client ID: VC-IRB-13-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/10/17 19:15  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/08/17 19:52  
 Analyst: DP  
 Percent Solids: 80%

Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.448	0.448	1	A
Hexachlorobenzene	ND		ug/kg	0.896	0.896	1	A
beta-BHC	ND		ug/kg	0.448	0.448	1	A
gamma-BHC	ND		ug/kg	0.448	0.448	1	A
delta-BHC	ND		ug/kg	0.448	0.448	1	A
Heptachlor	ND		ug/kg	0.448	0.448	1	A
Aldrin	ND		ug/kg	0.448	0.448	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.896	0.896	1	B
Oxychlordane	ND		ug/kg	0.896	0.896	1	B
gamma-Chlordane	ND		ug/kg	0.448	0.448	1	A
2,4'-DDE	ND		ug/kg	0.448	0.448	1	A
Endosulfan I	ND		ug/kg	0.448	0.448	1	A
alpha-Chlordane	ND		ug/kg	0.448	0.448	1	A
trans-Nonachlor	ND		ug/kg	0.448	0.448	1	A
4,4'-DDE	ND		ug/kg	0.448	0.448	1	A
Dieldrin	ND		ug/kg	0.448	0.448	1	A
2,4'-DDD	ND		ug/kg	0.448	0.448	1	A
Endrin	ND		ug/kg	0.448	0.448	1	A
Endosulfan II	ND		ug/kg	0.448	0.448	1	A
4,4'-DDD	ND		ug/kg	0.448	0.448	1	A
2,4'-DDT	ND		ug/kg	0.448	0.448	1	A
cis-Nonachlor	ND		ug/kg	0.448	0.448	1	A
Endrin aldehyde	ND		ug/kg	1.34	1.34	1	A
Endosulfan sulfate	ND		ug/kg	0.448	0.448	1	A
4,4'-DDT	ND		ug/kg	0.448	0.448	1	A
Endrin ketone	ND		ug/kg	0.448	0.448	1	A
Methoxychlor	ND		ug/kg	4.48	4.48	1	A
Mirex	ND		ug/kg	0.448	0.448	1	A
Toxaphene	ND		ug/kg	22.5	22.5	1	A
Chlordane	ND		ug/kg	22.5	22.5	1	A



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-05  
 Client ID: VC-IRB-13-ALT-S1  
 Sample Location: DELAWARE

Date Collected: 10/10/17 19:15  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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Organochlorine Pesticides by GC - Mansfield Lab							
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Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	59		30-150	A
DCB - Surrogate	66		30-150	A
TMX - Surrogate	51		30-150	B
DCB - Surrogate	68		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-06  
 Client ID: VC-IRB-13-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/10/17 19:25  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Matrix: Sediment  
 Analytical Method: 1,8081B  
 Analytical Date: 11/08/17 20:24  
 Analyst: DP  
 Percent Solids: 67%

Extraction Method: EPA 3570  
 Extraction Date: 11/06/17 18:15  
 Cleanup Method: EPA 3630  
 Cleanup Date: 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Organochlorine Pesticides by GC - Mansfield Lab</b>							
alpha-BHC	ND		ug/kg	0.282	0.282	1	A
Hexachlorobenzene	ND		ug/kg	0.563	0.563	1	A
beta-BHC	ND		ug/kg	0.282	0.282	1	A
gamma-BHC	ND		ug/kg	0.282	0.282	1	A
delta-BHC	ND		ug/kg	0.282	0.282	1	A
Heptachlor	ND		ug/kg	0.282	0.282	1	A
Aldrin	ND		ug/kg	0.282	0.282	1	A
Heptachlor epoxide (B)	ND		ug/kg	0.563	0.563	1	B
Oxychlordane	ND		ug/kg	0.563	0.563	1	B
gamma-Chlordane	ND		ug/kg	0.282	0.282	1	A
2,4'-DDE	ND		ug/kg	0.282	0.282	1	A
Endosulfan I	ND		ug/kg	0.282	0.282	1	A
alpha-Chlordane	ND		ug/kg	0.282	0.282	1	A
trans-Nonachlor	ND		ug/kg	0.282	0.282	1	A
4,4'-DDE	ND		ug/kg	0.282	0.282	1	A
Dieldrin	ND		ug/kg	0.282	0.282	1	A
2,4'-DDD	ND		ug/kg	0.282	0.282	1	A
Endrin	ND		ug/kg	0.282	0.282	1	A
Endosulfan II	ND		ug/kg	0.282	0.282	1	A
4,4'-DDD	ND		ug/kg	0.282	0.282	1	A
2,4'-DDT	ND		ug/kg	0.282	0.282	1	A
cis-Nonachlor	ND		ug/kg	0.282	0.282	1	A
Endrin aldehyde	ND		ug/kg	0.845	0.845	1	A
Endosulfan sulfate	ND		ug/kg	0.282	0.282	1	A
4,4'-DDT	ND		ug/kg	0.282	0.282	1	A
Endrin ketone	ND		ug/kg	0.282	0.282	1	A
Methoxychlor	ND		ug/kg	2.82	2.82	1	A
Mirex	ND		ug/kg	0.282	0.282	1	A
Toxaphene	ND		ug/kg	14.1	14.1	1	A
Chlordane	ND		ug/kg	14.1	14.1	1	A

Project Name: US WIND

Lab Number: L1736603

Project Number: U167-022

Report Date: 11/15/17

## SAMPLE RESULTS

Lab ID: L1736603-06  
 Client ID: VC-IRB-13-ALT-S2  
 Sample Location: DELAWARE

Date Collected: 10/10/17 19:25  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
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## Organochlorine Pesticides by GC - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	65		30-150	A
DCB - Surrogate	71		30-150	A
TMX - Surrogate	42		30-150	B
DCB - Surrogate	62		30-150	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8081B  
**Analytical Date:** 11/08/17 13:55  
**Analyst:** DP

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 18:15  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-06 Batch: WG1060111-1						
alpha-BHC	ND		ug/kg	0.200	0.200	A
Hexachlorobenzene	ND		ug/kg	0.400	0.400	A
beta-BHC	ND		ug/kg	0.200	0.200	A
gamma-BHC	ND		ug/kg	0.200	0.200	A
delta-BHC	ND		ug/kg	0.200	0.200	A
Heptachlor	ND		ug/kg	0.200	0.200	A
Aldrin	ND		ug/kg	0.200	0.200	A
gamma-Chlordane	ND		ug/kg	0.200	0.200	A
2,4'-DDE	ND		ug/kg	0.200	0.200	A
Endosulfan I	ND		ug/kg	0.200	0.200	A
alpha-Chlordane	ND		ug/kg	0.200	0.200	A
trans-Nonachlor	ND		ug/kg	0.200	0.200	A
4,4'-DDE	ND		ug/kg	0.200	0.200	A
Dieldrin	ND		ug/kg	0.200	0.200	A
2,4'-DDD	ND		ug/kg	0.200	0.200	A
Endrin	ND		ug/kg	0.200	0.200	A
Endosulfan II	ND		ug/kg	0.200	0.200	A
4,4'-DDD	ND		ug/kg	0.200	0.200	A
2,4'-DDT	ND		ug/kg	0.200	0.200	A
cis-Nonachlor	ND		ug/kg	0.200	0.200	A
Endrin aldehyde	ND		ug/kg	0.600	0.600	A
Endosulfan sulfate	ND		ug/kg	0.200	0.200	A
4,4'-DDT	ND		ug/kg	0.200	0.200	A
Endrin ketone	ND		ug/kg	0.200	0.200	A
Methoxychlor	ND		ug/kg	2.00	2.00	A
Mirex	ND		ug/kg	0.200	0.200	A
Toxaphene	ND		ug/kg	10.0	10.0	A
Chlordane	ND		ug/kg	10.0	10.0	A
Heptachlor epoxide (B)	ND		ug/kg	0.400	0.400	B

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**Method Blank Analysis**  
**Batch Quality Control**

**Analytical Method:** 1,8081B  
**Analytical Date:** 11/08/17 13:55  
**Analyst:** DP

**Extraction Method:** EPA 3570  
**Extraction Date:** 11/06/17 18:15  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 11/07/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-06 Batch: WG1060111-1						
Oxychlorane	ND		ug/kg	0.400	0.400	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	65		30-150	A
DCB - Surrogate	76		30-150	A
TMX - Surrogate	58		30-150	B
DCB - Surrogate	72		30-150	B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Lab Number: L1736603

Project Number: U167-022

Report Date: 11/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-06 Batch: WG1060111-2 WG1060111-3									
alpha-BHC	76		82		40-140	8		50	A
Hexachlorobenzene	68		73		40-140	7		50	A
beta-BHC	67		73		40-140	9		50	A
gamma-BHC	70		76		40-140	8		50	A
delta-BHC	80		88		40-140	10		50	A
Heptachlor	71		76		40-140	7		50	A
Aldrin	75		80		40-140	6		50	A
gamma-Chlordane	76		82		40-140	8		50	A
2,4'-DDE	73		78		40-140	7		50	A
Endosulfan I	73		77		40-140	5		50	A
alpha-Chlordane	73		78		40-140	7		50	A
trans-Nonachlor	74		80		40-140	8		50	A
4,4'-DDE	76		81		40-140	6		50	A
Dieldrin	79		82		40-140	4		50	A
2,4'-DDD	71		74		40-140	4		50	A
Endrin	71		75		40-140	5		50	A
Endosulfan II	71		75		40-140	5		50	A
4,4'-DDD	72		76		40-140	5		50	A
2,4'-DDT	124		132		40-140	6		50	A
cis-Nonachlor	72		76		40-140	5		50	A
Endrin aldehyde	66		70		40-140	6		50	A
Endosulfan sulfate	78		83		40-140	6		50	A
4,4'-DDT	82		88		40-140	7		50	A

## Lab Control Sample Analysis

Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736603

Report Date: 11/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-06 Batch: WG1060111-2 WG1060111-3								
Endrin ketone	88		93		40-140	6		50 A
Methoxychlor	78		83		40-140	6		50 A
Mirex	66		70		40-140	6		50 A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
TMX - Surrogate	62		66		30-150	A
DCB - Surrogate	73		77		30-150	A
TMX - Surrogate	54		59		30-150	B
DCB - Surrogate	68		72		30-150	B

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>	<b>Column</b>
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-06 Batch: WG1060111-2 WG1060111-3									
Heptachlor epoxide (B)	63		68		40-140	8		50	B
Oxychlorane	64		69		40-140	8		50	B

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>	<b>Column</b>
TMX - Surrogate	62		66		30-150	A
DCB - Surrogate	73		77		30-150	A
TMX - Surrogate	54		59		30-150	B
DCB - Surrogate	68		72		30-150	B



## METALS

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-01  
 Client ID: VC-IRB-11-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 78%

Date Collected: 10/10/17 15:40  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	1780		mg/kg	24.5	3.63	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Antimony, Total	0.041	J	mg/kg	0.392	0.033	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Arsenic, Total	1.12		mg/kg	0.123	0.016	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Barium, Total	3.20		mg/kg	0.736	0.052	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Beryllium, Total	0.065	J	mg/kg	0.074	0.021	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Cadmium, Total	0.028	J	mg/kg	0.049	0.006	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Calcium, Total	3290		mg/kg	123	14.9	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Chromium, Total	3.87		mg/kg	0.490	0.115	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Cobalt, Total	0.780		mg/kg	0.123	0.013	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Copper, Total	1.10		mg/kg	0.490	0.048	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Iron, Total	2360		mg/kg	49.0	5.05	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Lead, Total	1.52		mg/kg	0.147	0.036	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Magnesium, Total	790		mg/kg	24.5	3.02	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Manganese, Total	19.1		mg/kg	0.490	0.109	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.017	0.002	5	10/16/17 14:23	10/21/17 17:39	EPA 7474	1,7474	BV
Nickel, Total	2.00		mg/kg	0.245	0.066	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Potassium, Total	359		mg/kg	24.5	3.90	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Selenium, Total	0.674		mg/kg	0.490	0.185	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.123	0.012	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Sodium, Total	2140		mg/kg	36.8	2.87	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Thallium, Total	0.024	J	mg/kg	0.049	0.013	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Vanadium, Total	4.18		mg/kg	0.245	0.093	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM
Zinc, Total	6.11		mg/kg	2.45	0.638	2	10/16/17 13:37	10/23/17 13:10	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-02  
 Client ID: VC-IRB-11-ALT-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 48%

Date Collected: 10/10/17 15:50  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	13200		mg/kg	39.7	5.87	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Antimony, Total	0.078	J	mg/kg	0.635	0.054	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Arsenic, Total	6.24		mg/kg	0.198	0.026	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Barium, Total	37.3		mg/kg	1.19	0.084	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Beryllium, Total	0.575		mg/kg	0.119	0.035	2	10/16/17 13:37	10/24/17 16:35	EPA 3050B	1,6020A	AM
Cadmium, Total	0.110		mg/kg	0.079	0.011	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Calcium, Total	2100		mg/kg	198	24.1	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Chromium, Total	33.6		mg/kg	0.794	0.186	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Cobalt, Total	7.06		mg/kg	0.198	0.021	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Copper, Total	7.88		mg/kg	0.794	0.077	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Iron, Total	22500		mg/kg	79.4	8.17	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Lead, Total	7.71		mg/kg	0.238	0.058	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Magnesium, Total	6220		mg/kg	39.7	4.89	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Manganese, Total	184		mg/kg	0.794	0.176	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.027	0.003	5	10/16/17 14:23	10/21/17 17:42	EPA 7474	1,7474	BV
Nickel, Total	18.2		mg/kg	0.397	0.106	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Potassium, Total	3050		mg/kg	39.7	6.30	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Selenium, Total	6.13		mg/kg	0.794	0.300	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Silver, Total	0.027	J	mg/kg	0.198	0.019	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Sodium, Total	8440		mg/kg	59.5	4.65	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Thallium, Total	0.143		mg/kg	0.079	0.021	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Vanadium, Total	34.5		mg/kg	0.397	0.150	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM
Zinc, Total	51.7		mg/kg	3.97	1.03	2	10/16/17 13:37	10/23/17 13:14	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-03  
 Client ID: VC-IRB-24-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 45%

Date Collected: 10/10/17 14:45  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	15700		mg/kg	44.5	6.59	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Antimony, Total	0.160	J	mg/kg	0.713	0.060	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Arsenic, Total	12.0		mg/kg	0.223	0.029	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Barium, Total	37.2		mg/kg	1.34	0.094	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Beryllium, Total	0.690		mg/kg	0.134	0.039	2	10/16/17 13:37	10/24/17 16:39	EPA 3050B	1,6020A	AM
Cadmium, Total	0.144		mg/kg	0.089	0.012	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Calcium, Total	2910		mg/kg	223	27.1	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Chromium, Total	36.4		mg/kg	0.891	0.208	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Cobalt, Total	8.27		mg/kg	0.223	0.024	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Copper, Total	9.49		mg/kg	0.891	0.086	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Iron, Total	28200		mg/kg	89.1	9.18	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Lead, Total	9.59		mg/kg	0.267	0.065	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Magnesium, Total	7620		mg/kg	44.5	5.49	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Manganese, Total	202		mg/kg	0.891	0.198	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Mercury, Total	0.005	J	mg/kg	0.030	0.004	5	10/16/17 14:23	10/21/17 17:44	EPA 7474	1,7474	BV
Nickel, Total	20.2		mg/kg	0.445	0.119	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Potassium, Total	3240		mg/kg	44.5	7.07	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Selenium, Total	7.10		mg/kg	0.891	0.337	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Silver, Total	0.042	J	mg/kg	0.223	0.022	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Sodium, Total	8600		mg/kg	66.8	5.22	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Thallium, Total	0.159		mg/kg	0.089	0.023	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Vanadium, Total	38.2		mg/kg	0.445	0.169	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM
Zinc, Total	60.8		mg/kg	4.45	1.16	2	10/16/17 13:37	10/23/17 13:18	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-04  
 Client ID: VC-IRB-24-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 33%

Date Collected: 10/10/17 14:55  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	16500		mg/kg	58.6	8.68	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Antimony, Total	0.094	J	mg/kg	0.938	0.079	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Arsenic, Total	7.59		mg/kg	0.293	0.039	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Barium, Total	42.3		mg/kg	1.76	0.124	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Beryllium, Total	0.754		mg/kg	0.176	0.051	2	10/16/17 13:37	10/24/17 17:13	EPA 3050B	1,6020A	AM
Cadmium, Total	0.137		mg/kg	0.117	0.016	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Calcium, Total	2500		mg/kg	293	35.7	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Chromium, Total	38.9		mg/kg	1.17	0.274	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Cobalt, Total	8.47		mg/kg	0.293	0.031	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Copper, Total	9.42		mg/kg	1.17	0.114	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Iron, Total	29300		mg/kg	117	12.1	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Lead, Total	9.53		mg/kg	0.352	0.086	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Magnesium, Total	7100		mg/kg	58.6	7.22	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Manganese, Total	163		mg/kg	1.17	0.260	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.037	0.005	5	10/16/17 14:23	10/21/17 17:47	EPA 7474	1,7474	BV
Nickel, Total	22.2		mg/kg	0.586	0.157	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Potassium, Total	3560		mg/kg	58.6	9.31	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Selenium, Total	6.84		mg/kg	1.17	0.443	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Silver, Total	0.032	J	mg/kg	0.293	0.029	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Sodium, Total	12600		mg/kg	88.0	6.87	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Thallium, Total	0.153		mg/kg	0.117	0.030	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Vanadium, Total	42.9		mg/kg	0.586	0.222	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM
Zinc, Total	62.1		mg/kg	5.86	1.52	2	10/16/17 13:37	10/23/17 13:22	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-05  
 Client ID: VC-IRB-13-ALT-S1  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 80%

Date Collected: 10/10/17 19:15  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>T</b>											
Aluminum, Total	1160		mg/kg	24.9	3.69	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Antimony, Total	ND		mg/kg	0.399	0.034	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Arsenic, Total	0.835		mg/kg	0.125	0.016	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Barium, Total	2.67		mg/kg	0.748	0.053	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Beryllium, Total	0.049	J	mg/kg	0.075	0.022	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Cadmium, Total	0.008	J	mg/kg	0.050	0.007	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Calcium, Total	257		mg/kg	125	15.2	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Chromium, Total	2.85		mg/kg	0.498	0.117	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Cobalt, Total	0.693		mg/kg	0.125	0.013	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Copper, Total	0.472	J	mg/kg	0.498	0.048	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Iron, Total	1560		mg/kg	49.8	5.13	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Lead, Total	1.31		mg/kg	0.150	0.036	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Magnesium, Total	549		mg/kg	24.9	3.07	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Manganese, Total	14.7		mg/kg	0.498	0.111	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.015	0.002	5	10/16/17 14:23	10/21/17 17:49	EPA 7474	1,7474	BV
Nickel, Total	1.44		mg/kg	0.249	0.067	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Potassium, Total	208		mg/kg	24.9	3.96	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Selenium, Total	0.777		mg/kg	0.498	0.188	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Silver, Total	ND		mg/kg	0.125	0.012	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Sodium, Total	1810		mg/kg	37.4	2.92	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Thallium, Total	0.017	J	mg/kg	0.050	0.013	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Vanadium, Total	2.94		mg/kg	0.249	0.095	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM
Zinc, Total	4.01		mg/kg	2.49	0.648	2	10/16/17 13:37	10/23/17 13:26	EPA 3050B	1,6020A	AM



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

Lab ID: L1736603-06  
 Client ID: VC-IRB-13-ALT-S2  
 Sample Location: DELAWARE  
 Matrix: Sediment  
 Percent Solids: 67%

Date Collected: 10/10/17 19:25  
 Date Received: 10/11/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	8780		mg/kg	28.9	4.28	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Antimony, Total	0.045	J	mg/kg	0.463	0.039	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Arsenic, Total	5.39		mg/kg	0.145	0.019	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Barium, Total	24.4		mg/kg	0.868	0.061	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Beryllium, Total	0.358		mg/kg	0.087	0.025	2	10/16/17 13:37	10/24/17 17:17	EPA 3050B	1,6020A	AM
Cadmium, Total	0.082		mg/kg	0.058	0.008	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Calcium, Total	1850		mg/kg	145	17.6	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Chromium, Total	22.3		mg/kg	0.578	0.135	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Cobalt, Total	4.99		mg/kg	0.145	0.015	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Copper, Total	5.65		mg/kg	0.578	0.056	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Iron, Total	16100		mg/kg	57.8	5.96	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Lead, Total	4.92		mg/kg	0.174	0.042	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Magnesium, Total	5000		mg/kg	28.9	3.56	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Manganese, Total	124		mg/kg	0.578	0.128	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Mercury, Total	ND		mg/kg	0.020	0.003	5	10/16/17 14:23	10/21/17 17:52	EPA 7474	1,7474	BV
Nickel, Total	12.3		mg/kg	0.289	0.077	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Potassium, Total	1940		mg/kg	28.9	4.59	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Selenium, Total	3.99		mg/kg	0.578	0.219	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Silver, Total	0.020	J	mg/kg	0.145	0.014	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Sodium, Total	7460		mg/kg	43.4	3.39	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Thallium, Total	0.109		mg/kg	0.058	0.015	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Vanadium, Total	21.7		mg/kg	0.289	0.110	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM
Zinc, Total	35.8		mg/kg	2.89	0.752	2	10/16/17 13:37	10/23/17 13:30	EPA 3050B	1,6020A	AM



Project Name: US WIND  
Project Number: U167-022

Lab Number: L1736603  
Report Date: 11/15/17

## Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG1052673-1										
Aluminum, Total	ND		mg/kg	20.0	2.96	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Antimony, Total	0.049	J	mg/kg	0.320	0.027	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Arsenic, Total	ND		mg/kg	0.100	0.013	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Barium, Total	ND		mg/kg	0.600	0.042	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Beryllium, Total	ND		mg/kg	0.060	0.017	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Cadmium, Total	ND		mg/kg	0.040	0.005	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Calcium, Total	ND		mg/kg	100	12.2	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Chromium, Total	ND		mg/kg	0.400	0.094	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Cobalt, Total	ND		mg/kg	0.100	0.011	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Copper, Total	ND		mg/kg	0.400	0.039	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Iron, Total	ND		mg/kg	40.0	4.12	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Lead, Total	ND		mg/kg	0.120	0.029	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Magnesium, Total	ND		mg/kg	20.0	2.46	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Manganese, Total	ND		mg/kg	0.400	0.089	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Nickel, Total	ND		mg/kg	0.200	0.053	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Potassium, Total	ND		mg/kg	20.0	3.18	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Selenium, Total	ND		mg/kg	0.400	0.151	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Silver, Total	ND		mg/kg	0.100	0.010	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Sodium, Total	ND		mg/kg	30.0	2.34	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Thallium, Total	ND		mg/kg	0.040	0.010	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Vanadium, Total	ND		mg/kg	0.200	0.076	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM
Zinc, Total	ND		mg/kg	2.00	0.520	2	10/16/17 13:37	10/23/17 11:10	1,6020A	AM

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG1052675-1										
Mercury, Total	ND		mg/kg	0.013	0.002	5	10/16/17 14:23	10/21/17 17:05	1,7474	BV





**Project Name:** US WIND

**Lab Number:** L1736603

**Project Number:** U167-022

**Report Date:** 11/15/17

## **Method Blank Analysis Batch Quality Control**

### **Prep Information**

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Digestion Method: EPA 7474

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Lab Number: L1736603

Project Number: U167-022

Report Date: 11/15/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG1052673-2 SRM Lot Number: D093-540								
Aluminum, Total	78		-		55-146	-		20
Antimony, Total	156		-		2-204	-		20
Arsenic, Total	106		-		70-130	-		20
Barium, Total	98		-		83-117	-		20
Beryllium, Total	106		-		83-117	-		20
Cadmium, Total	96		-		83-117	-		20
Calcium, Total	99		-		83-117	-		20
Chromium, Total	101		-		80-120	-		20
Cobalt, Total	99		-		84-116	-		20
Copper, Total	97		-		82-118	-		20
Iron, Total	114		-		47-153	-		20
Lead, Total	98		-		82-117	-		20
Magnesium, Total	92		-		77-124	-		20
Manganese, Total	102		-		81-119	-		20
Nickel, Total	99		-		83-117	-		20
Potassium, Total	87		-		71-129	-		20
Selenium, Total	104		-		78-122	-		20
Silver, Total	99		-		76-124	-		20
Sodium, Total	97		-		72-128	-		20
Thallium, Total	90		-		79-121	-		20
Vanadium, Total	103		-		78-122	-		20

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG1052673-2 SRM Lot Number: D093-540					
Zinc, Total	96	-	83-117	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG1052675-2 SRM Lot Number: D093-540					
Mercury, Total	96	-	72-128	-	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06    QC Batch ID: WG1052673-3    QC Sample: L1735614-04    Client ID: MS Sample												
Aluminum, Total	11100	304	13800	889	Q	-	-		75-125	-		20
Antimony, Total	1.50	75.9	53.6	69	Q	-	-		75-125	-		20
Arsenic, Total	19.4	18.2	37.0	97		-	-		75-125	-		20
Barium, Total	136.	304	392	84		-	-		75-125	-		20
Beryllium, Total	0.672	7.59	7.02	84		-	-		75-125	-		20
Cadmium, Total	4.58	7.74	12.4	101		-	-		75-125	-		20
Calcium, Total	6700	1520	8790	138	Q	-	-		75-125	-		20
Chromium, Total	156.	30.4	199	142	Q	-	-		75-125	-		20
Cobalt, Total	10.2	75.9	81.8	94		-	-		75-125	-		20
Copper, Total	222.	38	267	118		-	-		75-125	-		20
Iron, Total	30600	152	34300	2440	Q	-	-		75-125	-		20
Lead, Total	196.	77.4	286	116		-	-		75-125	-		20
Magnesium, Total	7230	1520	9510	150	Q	-	-		75-125	-		20
Manganese, Total	455.	75.9	567	148	Q	-	-		75-125	-		20
Nickel, Total	40.5	75.9	120	105		-	-		75-125	-		20
Potassium, Total	2000	1520	3780	117		-	-		75-125	-		20
Selenium, Total	7.32	18.2	24.6	95		-	-		75-125	-		20
Silver, Total	4.64	45.5	11.7	16	Q	-	-		75-125	-		20
Sodium, Total	6580	1520	8620	134	Q	-	-		75-125	-		20
Thallium, Total	0.166	18.2	14.8	80		-	-		75-125	-		20
Vanadium, Total	35.4	75.9	113	102		-	-		75-125	-		20

**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

<b>Parameter</b>	<b>Native Sample</b>	<b>MS Added</b>	<b>MS Found</b>	<b>MS %Recovery</b>	<b>MSD Found</b>	<b>MSD %Recovery</b>	<b>Recovery Limits</b>	<b>RPD</b>	<b>RPD Limits</b>
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1052673-3 QC Sample: L1735614-04 Client ID: MS Sample									
Zinc, Total	328.	75.9	409	107	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1052675-3 QC Sample: L1735614-04 Client ID: MS Sample									
Mercury, Total	4.57	1.36	5.92	99	-	-	80-120	-	20

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1052673-4 QC Sample: L1735614-04 Client ID: DUP Sample						
Aluminum, Total	11100	11600	mg/kg	4		20
Antimony, Total	1.50	1.86	mg/kg	21	Q	20
Arsenic, Total	19.4	20.2	mg/kg	4		20
Barium, Total	136.	151	mg/kg	10		20
Beryllium, Total	0.672	0.685	mg/kg	2		20
Cadmium, Total	4.58	4.75	mg/kg	4		20
Calcium, Total	6700	8810	mg/kg	27	Q	20
Chromium, Total	156.	156	mg/kg	0		20
Cobalt, Total	10.2	10.5	mg/kg	3		20
Copper, Total	222.	224	mg/kg	1		20
Iron, Total	30600	31700	mg/kg	4		20
Lead, Total	196.	204	mg/kg	4		20
Magnesium, Total	7230	7490	mg/kg	4		20
Manganese, Total	455.	467	mg/kg	3		20
Nickel, Total	40.5	41.9	mg/kg	3		20
Potassium, Total	2000	2060	mg/kg	3		20
Selenium, Total	7.32	7.83	mg/kg	7		20
Silver, Total	4.64	4.83	mg/kg	4		20
Sodium, Total	6580	6610	mg/kg	0		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736603

Report Date: 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1052673-4 QC Sample: L1735614-04 Client ID: DUP Sample</b>					
Thallium, Total	0.166	0.177	mg/kg	6	20
Vanadium, Total	35.4	36.6	mg/kg	3	20
Zinc, Total	328.	341	mg/kg	4	20
<b>Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1052675-4 QC Sample: L1735614-04 Client ID: DUP Sample</b>					
Mercury, Total	4.57	4.65	mg/kg	2	20

# **INORGANICS & MISCELLANEOUS**



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736603-01  
**Client ID:** VC-IRB-11-ALT-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/10/17 15:40  
**Date Received:** 10/11/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.200		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	0.174		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Sand	1.00		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Medium Sand	38.5		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Sand	55.1		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Sand	94.6		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Silt Fine	5.20		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Clay Fine	0.200		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Fines	5.40		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	ND		mg/kg	9.4	3.5	1	10/18/17 14:17	10/18/17 22:38	121,4500NH3-BH	AT
Phosphorus, Total	93		mg/kg	5.8	1.9	.9	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	77.8		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Solids, Ash	99		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	0.55		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	18.9		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/07/17 08:24	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/07/17 08:24	91,-	LC
Moisture	22.2		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Specific Gravity	2.80		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	94.05		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	18.00		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	79.70		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	19.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plastic Limit	16.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plasticity Index	3.0		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736603-02  
**Client ID:** VC-IRB-11-ALT-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/10/17 15:50  
**Date Received:** 10/11/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	5.02		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	4.59		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Gravel	1.10		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Gravel	1.10		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Sand	8.80		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Medium Sand	22.3		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Sand	19.1		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Sand	50.2		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Silt Fine	38.9		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Clay Fine	9.80		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Fines	48.7		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	67		mg/kg	16	5.8	1	10/18/17 14:17	10/18/17 22:41	121,4500NH3-BH	AT
Phosphorus, Total	410		mg/kg	10	3.5	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	48.1		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Solids, Ash	91		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	0.59		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	49.5		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	0.087		%	0.050	NA	1	-	11/07/17 08:24	91,-	LC
% Soot (Rep 2)	0.110		%	0.050	NA	1	-	11/07/17 08:24	91,-	LC
Moisture	51.9		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Specific Gravity	2.67		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	77.27		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	69.80		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	45.50		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	55.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plastic Limit	46.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plasticity Index	9.0		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736603-03  
**Client ID:** VC-IRB-24-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/10/17 14:45  
**Date Received:** 10/11/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	1.45		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	1.51		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Sand	7.10		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Medium Sand	9.20		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Sand	16.2		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Sand	32.5		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Silt Fine	49.6		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Clay Fine	17.9		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Fines	67.5		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	64		mg/kg	16	6.0	1	10/18/17 14:17	10/18/17 22:42	121,4500NH3-BH	AT
Phosphorus, Total	180		mg/kg	10	3.3	.9	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	44.9		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Solids, Ash	96		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	3.9		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	46.9		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	0.077		%	0.050	NA	1	-	11/07/17 21:32	91,-	LC
% Soot (Rep 2)	0.081		%	0.050	NA	1	-	11/07/17 21:32	91,-	LC
Moisture	55.1		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Specific Gravity	2.16		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	89.41		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	51.50		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	59.00		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	48.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plastic Limit	42.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plasticity Index	6.0		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736603-04  
**Client ID:** VC-IRB-24-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/10/17 14:55  
**Date Received:** 10/11/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	6.59		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	5.91		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Gravel	4.00		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Gravel	4.00		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Sand	18.8		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Medium Sand	20.0		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Sand	17.5		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Sand	56.3		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Silt Fine	30.4		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Clay Fine	9.30		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Fines	39.7		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	200		mg/kg	22	8.1	1	10/18/17 14:17	10/18/17 22:43	121,4500NH3-BH	AT
Phosphorus, Total	480		mg/kg	14	4.5	.9	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	33.3		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Solids, Ash	87		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	13		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	65.9		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	0.233		%	0.050	NA	1	-	11/07/17 22:13	91,-	LC
% Soot (Rep 2)	0.227		%	0.050	NA	1	-	11/07/17 22:13	91,-	LC
Moisture	66.7		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Specific Gravity	2.48		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	71.20		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	93.00		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	36.90		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	69.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plastic Limit	62.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plasticity Index	7.0		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736603-05  
**Client ID:** VC-IRB-13-ALT-S1  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/10/17 19:15  
**Date Received:** 10/11/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	0.093		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	ND		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Sand	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Medium Sand	0.100		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Sand	24.5		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Sand	24.6		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Silt Fine	69.3		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Clay Fine	6.10		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Fines	75.4		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	6.5	J	mg/kg	9.1	3.4	1	10/18/17 14:17	10/18/17 22:44	121,4500NH3-BH	AT
Phosphorus, Total	84		mg/kg	6.3	2.1	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	79.6		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Solids, Ash	100		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	0.29		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	21.0		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/07/17 22:23	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/07/17 22:23	91,-	LC
Moisture	20.4		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Specific Gravity	2.79		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	84.63		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	21.60		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	69.60		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	25.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plastic Limit	27.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plasticity Index	NP		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**SAMPLE RESULTS**

**Lab ID:** L1736603-06  
**Client ID:** VC-IRB-13-ALT-S2  
**Sample Location:** DELAWARE  
**Matrix:** Sediment

**Date Collected:** 10/10/17 19:25  
**Date Received:** 10/11/17  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Organic Carbon - Mansfield Lab</b>										
Total Organic Carbon (Rep1)	1.01		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	0.892		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>Grain Size Analysis - Mansfield Lab</b>										
Cobbles	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Gravel	ND		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Coarse Sand	1.50		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Medium Sand	8.70		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Fine Sand	25.0		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Sand	35.2		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Silt Fine	55.6		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Clay Fine	9.20		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
% Total Fines	64.8		%	0.100	NA	1	-	11/06/17 09:54	12,D6913/D7928	SP
<b>General Chemistry - Westborough Lab</b>										
Nitrogen, Ammonia	80		mg/kg	11	4.1	1	10/18/17 14:17	10/18/17 22:45	121,4500NH3-BH	AT
Phosphorus, Total	340		mg/kg	7.5	2.5	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	67.0		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Solids, Ash	97		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Organic Matter, Total	2.9		%	0.10	0.10	1	-	11/02/17 13:50	12,D2974	SP
Moisture	36.4		%	0.100	NA	1	-	11/02/17 13:50	12,D2974	SP
% Soot (Rep 1)	0.056		%	0.050	NA	1	-	11/07/17 22:33	91,-	LC
% Soot (Rep 2)	0.061		%	0.050	NA	1	-	11/07/17 22:33	91,-	LC
Moisture	33.0		%	0.100	0.100	1	-	11/03/17 15:06	121,2540G	LD
Specific Gravity	2.65		-	-	NA	1	-	11/06/17 13:00	12,D854	SP
<b>Density of Soil - Mansfield Lab</b>										
Bulk Density	84.69		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Moisture Content	15.20		%	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
Dry Density	73.50		lbs/ft3	0.0100	NA	1	-	11/06/17 14:30	12,D7263	SP
<b>Atterberg Limits - Mansfield Lab</b>										
Liquid Limit	39.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plastic Limit	35.		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC
Plasticity Index	4.0		-	-	NA	1	-	11/15/17 15:00	12,D4318	RC



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1053383-1</b>										
Phosphorus, Total	1.7	J	mg/kg	5.0	1.7	1	-	10/17/17 19:00	121,4500P-E	CW
<b>General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1053590-1</b>										
Nitrogen, Ammonia	ND		mg/kg	7.5	0.02	1	10/18/17 14:17	10/18/17 22:29	121,4500NH3-BH	AT
<b>Total Organic Carbon - Mansfield Lab for sample(s): 01-06 Batch: WG1060823-1</b>										
Total Organic Carbon (Rep1)	ND		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
Total Organic Carbon (Rep2)	ND		%	0.050	0.050	1	-	11/07/17 08:24	13,-	LC
<b>General Chemistry - Mansfield Lab for sample(s): 01-02 Batch: WG1060826-1</b>										
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/07/17 08:24	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/07/17 08:24	91,-	LC
<b>General Chemistry - Mansfield Lab for sample(s): 03-06 Batch: WG1060927-1</b>										
% Soot (Rep 1)	ND		%	0.050	NA	1	-	11/07/17 21:11	91,-	LC
% Soot (Rep 2)	ND		%	0.050	NA	1	-	11/07/17 21:11	91,-	LC

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: US WIND

Project Number: U167-022

Lab Number: L1736603

Report Date: 11/15/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1053383-2								
Phosphorus, Total	90		-		52-148	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1053590-2								
Nitrogen, Ammonia	99		-		83-115	-		20
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-06 Batch: WG1060823-2								
Total Organic Carbon (Rep1)	92		-		75-125	-		25
Total Organic Carbon (Rep2)	83		-		75-125	-		25
General Chemistry - Mansfield Lab Associated sample(s): 01-02 Batch: WG1060826-2								
% Soot (Rep 1)	98		-		75-125	-		25
% Soot (Rep 2)	100		-		75-125	-		25
General Chemistry - Mansfield Lab Associated sample(s): 03-06 Batch: WG1060927-2								
% Soot (Rep 1)	103		-		75-125	-		25
% Soot (Rep 2)	101		-		75-125	-		25



### Matrix Spike Analysis Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1053383-4 QC Sample: L1736278-15 Client ID: MS Sample												
Phosphorus, Total	460	361	820	100		-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1053590-4 QC Sample: L1736485-01 Client ID: MS Sample												
Nitrogen, Ammonia	3.6J	480	470	97		-	-		55-144	-		20
Total Organic Carbon - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1060823-4 QC Sample: L1737042-04 Client ID: MS Sample												
Total Organic Carbon (Rep1)	8.26	1.33	8.41	11	Q	-	-		75-125	-		25
Total Organic Carbon (Rep2)	8.22	1.73	10.4	126	Q	-	-		75-125	-		25
General Chemistry - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1060826-4 QC Sample: L1736603-01 Client ID: VC-IRB-11-ALT-S1												
% Soot (Rep 1)	ND	0.656	0.742	113		-	-		75-125	-		25
% Soot (Rep 2)	ND	0.705	0.770	109		-	-		75-125	-		25
General Chemistry - Mansfield Lab Associated sample(s): 03-06 QC Batch ID: WG1060927-4 QC Sample: L1736603-03 Client ID: VC-IRB-24-S1												
% Soot (Rep 1)	0.077	0.796	0.926	107		-	-		75-125	-		25
% Soot (Rep 2)	0.081	0.63	0.743	105		-	-		75-125	-		25

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1053383-3 QC Sample: L1736278-15 Client ID: DUP Sample						
Phosphorus, Total	460	470	mg/kg	2		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1053590-3 QC Sample: L1736485-01 Client ID: DUP Sample						
Nitrogen, Ammonia	3.6J	4.2J	mg/kg	NC		20
General Chemistry - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1059383-1 QC Sample: L1736003-01 Client ID: DUP Sample						
Moisture	88.0	20.9	%	6		10
Grain Size Analysis - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1059963-1 QC Sample: L1736603-01 Client ID: VC-IRB-11-ALT-S1						
Cobbles	ND	ND	%	NC		20
% Coarse Gravel	ND	ND	%	NC		20
% Fine Gravel	ND	1.00	%	NC		20
% Total Gravel	ND	1.00	%	NC		20
% Coarse Sand	1.00	1.10	%	10		20
% Medium Sand	38.5	36.8	%	5		20
% Fine Sand	55.1	55.1	%	0		20
% Total Sand	94.6	93.0	%	2		20
% Silt Fine	5.20	5.00	%	4		20
% Clay Fine	0.200	1.00	%	133	Q	20
% Total Fines	5.40	6.00	%	11		20

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1060364-1 QC Sample: L1736603-01 Client ID: VC-IRB-11-ALT-S1</b>					
Solids, Ash	99.	99U	%	0	
Organic Matter, Total	0.55	0.59U	%	7	
Moisture	18.9	19.0	%	1	10
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1060447-1 QC Sample: L1736603-01 Client ID: VC-IRB-11-ALT-S1</b>					
Specific Gravity	2.80	2.54U	-	10	20
<b>Density of Soil - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1060464-1 QC Sample: L1736603-01 Client ID: VC-IRB-11-ALT-S1</b>					
Bulk Density	94.05	98.83	lbs/ft3	5	20
Moisture Content	18.00	18.30	%	2	20
Dry Density	79.70	83.53	lbs/ft3	5	20
<b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1060823-3 QC Sample: L1737042-04 Client ID: DUP Sample</b>					
Total Organic Carbon (Rep1)	8.26	7.95	%	4	25
Total Organic Carbon (Rep2)	8.22	7.79	%	5	25
<b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1060823-5 QC Sample: L1737042-06 Client ID: DUP Sample</b>					
Total Organic Carbon (Rep1)	8.35	8.10	%	3	25
Total Organic Carbon (Rep2)	8.40	8.27	%	2	25
<b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1060823-7 QC Sample: L1737042-11 Client ID: DUP Sample</b>					
Total Organic Carbon (Rep1)	7.64	7.55	%	1	25
Total Organic Carbon (Rep2)	7.56	7.59	%	0	25

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>General Chemistry - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1060826-3 QC Sample: L1736603-01 Client ID: VC-IRB-11-ALT-S1</b>					
% Soot (Rep 1)	ND	ND	%	NC	25
% Soot (Rep 2)	ND	ND	%	NC	25
<b>General Chemistry - Mansfield Lab Associated sample(s): 03-06 QC Batch ID: WG1060927-3 QC Sample: L1736603-03 Client ID: VC-IRB-24-S1</b>					
% Soot (Rep 1)	0.077	0.071	%	9	25
% Soot (Rep 2)	0.081	0.080	%	1	25
<b>Atterberg Limits - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1063371-1 QC Sample: L1736603-01 Client ID: VC-IRB-11-ALT-S1</b>					
Liquid Limit	19.	19	-	0	20
Plastic Limit	16.	16	-	0	20
Plasticity Index	3.0	3.0	-	0	20

**Project Name:** US WIND  
**Project Number:** U167-022

**Serial\_No:**11151719:53  
**Lab Number:** L1736603  
**Report Date:** 11/15/17

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Cooler Information**

**Cooler**                      **Custody Seal**  
A                                      Absent

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736603-01A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736603-01B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736603-01C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736603-01D	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736603-01E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1736603-01F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

\*Values in parentheses indicate holding time in days



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**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1736603-01G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-02A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736603-02B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736603-02C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736603-02D	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736603-02E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-02F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-02G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()

\*Values in parentheses indicate holding time in days



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**Report Date:** 11/15/17

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736603-03A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)
L1736603-03B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736603-03C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736603-03D	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736603-03E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1736603-03F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1736603-03G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1736603-04A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)

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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736603-04B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736603-04C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736603-04D	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736603-04E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-04F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-04G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-05A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)



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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736603-05B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736603-05C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736603-05D	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736603-05E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-05F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-05G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-06A	Glass 250ml/8oz unpreserved	A	NA		3.2	Y	Absent		TPHOS-4500(28),NH3-4500(28)

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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L1736603-06B	Glass 500ml/16oz unpreserved	A	NA		3.2	Y	Absent		A2-FE-6020T(180),A2-PB-6020T(180),A2-BA-6020T(180),A2-FOC(28),A2-MOISTURE-2540(7),A2-NI-6020T(180),A2-PEST-8081(14),A2-SB-6020T(180),A2-ZN-6020T(180),A2-HG-7474T(28),A2-K-6020T(180),A2-CR-6020T(180),A2-TL-6020T(180),A2-TOC-LK-2REPS(14),A2-TS(7),A2-AS-6020T(180),A2-CO-6020T(180),A2-MN-6020T(180),A2-PAH-8270SIM(14),A2-BE-6020T(180),A2-CD-6020T(180),A2-HGPREP-AF(28),A2-SOOT-LK-2REPS(14),A2-V-6020T(180),A2-MG-6020T(180),A2-PREP-3050:2T(180),A2-SE-6020T(180),A2-AG-6020T(180),A2-AL-6020T(180),A2-CA-6020T(180),A2-CU-6020T(180),A2-NA-6020T(180),A2-PREP-3050:1T(180)
L1736603-06C	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-DIOXIN-1613B(365)
L1736603-06D	Amber 120ml unpreserved	A	NA		3.2	Y	Absent		SUB-PCB-1668()
L1736603-06E	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-06F	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()
L1736603-06G	Plastic 8oz unpreserved for Grain Size	A	NA		3.2	Y	Absent		A2-HYDRO-TFINE(),A2-DENSITY-SOIL(),A2-HYDRO-CFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-TGRAVEL(),A2-HYDRO-CSAND(),A2-HYDRO-SFINE(),A2-HYDRO-TSAND(),A2-ATTERBERG(),A2-SPECGRAV(),A2-HYDRO-COBBLER(),A2-HYDRO-FGRAVEL()

\*Values in parentheses indicate holding time in days



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## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

**Report Format:** DU Report with 'J' Qualifiers



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

#### Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers



**Project Name:** US WIND  
**Project Number:** U167-022

**Lab Number:** L1736603  
**Report Date:** 11/15/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 12 Annual Book of ASTM Standards. (American Society for Testing and Materials) ASTM International.
- 13 Determination of Total Organic Carbon in Sediment. U.S. EPA, Region II. July 27, 1988.
- 91 Analysis of Soot following ES&T publications by Accardi-Dey and Gschwend, 2003; and Gustafsson (et. al.), 1997.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



# **ASTM D6913/D7928**

## **GRAIN SIZE ANALYSIS**



## GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2017

Location: VC-IRB-11-ALT-S1

Sample Number: L1736603-01

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 41.77  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
41.77	0.00	0.75	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.41	0.00	99.0
		#20	3.18	0.00	91.4
		#40	12.93	0.00	60.5
		#60	12.40	0.00	30.8
		#140	10.28	0.00	6.2
		#200	0.30	0.00	5.4

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 5.4

Weight of hydrometer sample = 41.27

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0020	1.0022	0.0134	2.0	15.8	0.0377	0.5
5.00	21.4	1.0020	1.0022	0.0134	2.0	15.8	0.0238	0.5
15.00	21.4	1.0010	1.0012	0.0134	1.0	16.0	0.0139	0.2
30.00	21.4	1.0010	1.0012	0.0134	1.0	16.0	0.0098	0.2
60.00	21.4	1.0010	1.0012	0.0134	1.0	16.0	0.0069	0.2
240.00	21.4	1.0010	1.0012	0.0134	1.0	16.0	0.0035	0.2
1440.00	21.4	1.0010	1.0012	0.0134	1.0	16.0	0.0014	0.2

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	1.0	38.5	55.1	94.6	5.2	0.2	5.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0680	0.1398	0.1692	0.1956	0.2462	0.2977	0.3546	0.4216	0.6216	0.7008	0.8095	0.9990

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.73	3.02	1.03

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## GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2017

Location: VC-IRB-11-ALT-S1

Sample Number: WG1059963-1

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 41.91  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
41.91	0.00	0.75	0.00	0.00	100.0
		#4	0.44	0.00	99.0
		#10	0.42	0.00	97.9
		#20	2.98	0.00	90.8
		#40	12.46	0.00	61.1
		#60	12.22	0.00	31.9
		#140	10.52	0.00	6.8
		#200	0.36	0.00	6.0

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 6.0  
 Weight of hydrometer sample = 43.43  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0055	1.0057	0.0134	5.5	14.8	0.0365	1.3
5.00	21.4	1.0055	1.0057	0.0134	5.5	14.8	0.0231	1.3
15.00	21.4	1.0050	1.0052	0.0134	5.0	15.0	0.0134	1.1
30.00	21.4	1.0050	1.0052	0.0134	5.0	15.0	0.0095	1.1
60.00	21.4	1.0045	1.0047	0.0134	4.5	15.1	0.0067	1.0
240.00	21.4	1.0040	1.0042	0.0134	4.0	15.2	0.0034	0.9
1440.00	21.4	1.0040	1.0042	0.0134	4.0	15.2	0.0014	0.9

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.0	1.0	1.1	36.8	55.1	93.0	5.0	1.0	6.0

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0618	0.1337	0.1634	0.1897	0.2401	0.2918	0.3489	0.4166	0.6222	0.7058	0.8239	1.0492

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.74	3.12	1.04

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## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-11-ALT-S2

Sample Number: L1736603-02

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 24.60  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
24.60	0.00	0.75	0.00	0.00	100.0
		#4	0.27	0.00	98.9
		#10	2.16	0.00	90.1
		#20	3.93	0.00	74.1
		#40	1.55	0.00	67.8
		#60	1.33	0.00	62.4
		#140	2.68	0.00	51.5
		#200	0.71	0.00	48.7

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 48.7

Weight of hydrometer sample = 26.37

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0055	1.0057	0.0134	5.5	14.8	0.0365	16.8
5.00	21.4	1.0050	1.0052	0.0134	5.0	15.0	0.0232	15.3
15.00	21.4	1.0040	1.0042	0.0134	4.0	15.2	0.0135	12.3
30.00	21.4	1.0040	1.0042	0.0134	4.0	15.2	0.0096	12.3
60.00	21.4	1.0035	1.0037	0.0134	3.5	15.4	0.0068	10.9
240.00	21.4	1.0030	1.0032	0.0134	3.0	15.5	0.0034	9.4
1440.00	21.4	1.0030	1.0032	0.0134	3.0	15.5	0.0014	9.4

## Fractional Components

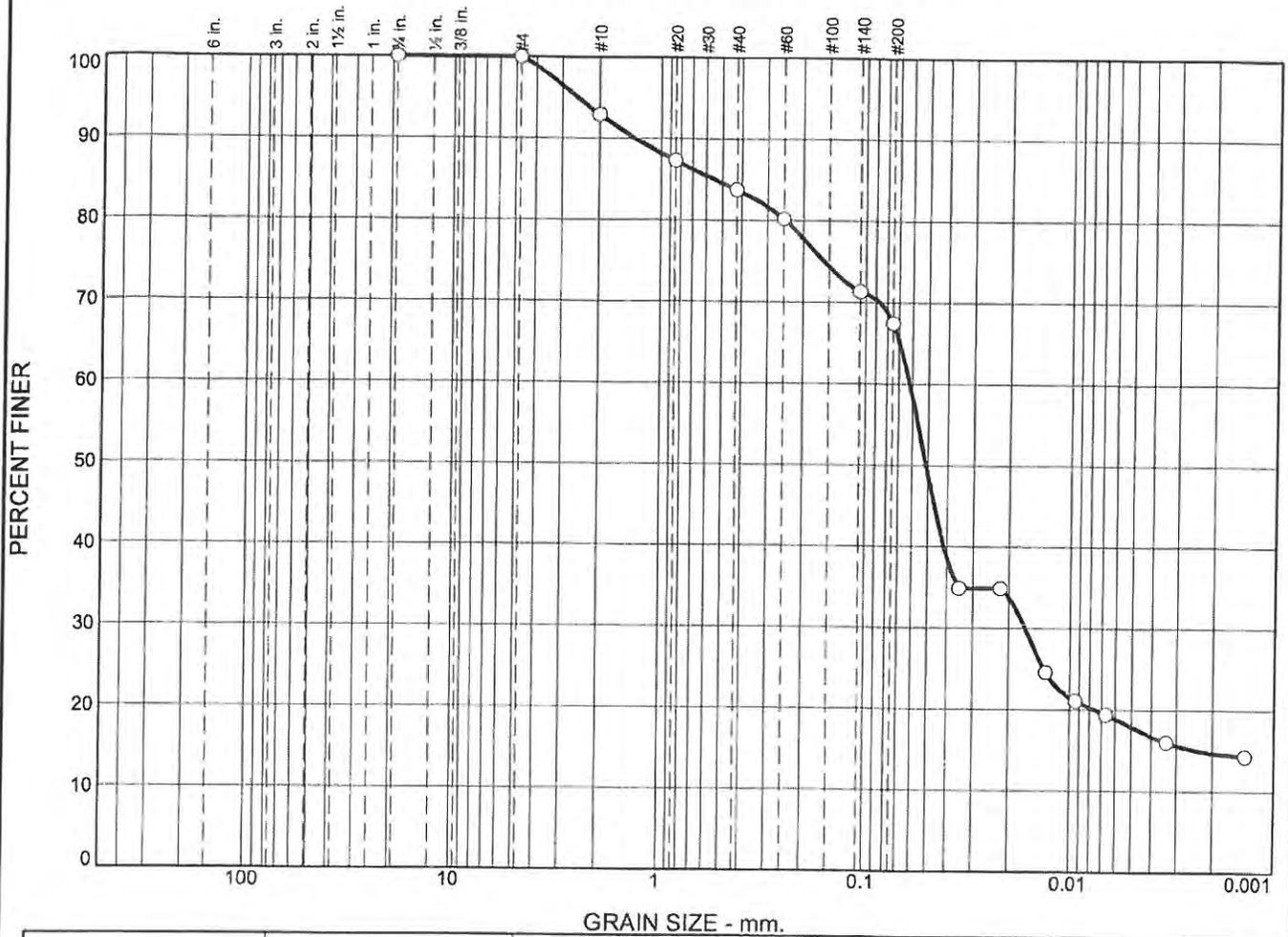
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.1	1.1	8.8	22.3	19.1	50.2	38.9	9.8	48.7

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0054	0.0224	0.0404	0.0498	0.0602	0.0803	0.2119	1.1889	1.5232	1.9857	2.8504

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.39	39.28	2.17

Alpha Analytical

# Particle Size Distribution Report



% +3"		% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
<input type="checkbox"/>	0.0	0.0	0.0	7.1	9.2	16.2	49.6	17.9

<input checked="" type="checkbox"/>	Colloids	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input type="checkbox"/>				0.5512	0.0619	0.0510	0.0167	0.0024			

Material Description							USCS	AASHTO
<input type="checkbox"/>								

Project No. _____	Client: _____
Project: _____	
<input type="checkbox"/> Source of Sample: VC-IRB-24-S1      Sample Number: L1736603-03	
Date: <input type="checkbox"/> _____	
<b>Alpha Analytical</b> <b>Mansfield, MA</b>	

Remarks: _____ _____ _____
Figure

## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-24-S1

Sample Number: L1736603-03

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 27.38

Tare Wt. = 0.00

Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
27.38	0.00	0.75	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	1.95	0.00	92.9
		#20	1.54	0.00	87.3
		#40	0.98	0.00	83.7
		#60	0.96	0.00	80.2
		#140	2.42	0.00	71.3
		#200	1.06	0.00	67.5

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 67.5

Weight of hydrometer sample = 31.59

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0100	1.0102	0.0134	10.0	13.6	0.0350	34.9
5.00	21.4	1.0100	1.0102	0.0134	10.0	13.6	0.0222	34.9
15.00	21.4	1.0070	1.0072	0.0134	7.0	14.4	0.0132	24.6
30.00	21.4	1.0060	1.0062	0.0134	6.0	14.7	0.0094	21.1
60.00	21.4	1.0055	1.0057	0.0134	5.5	14.8	0.0067	19.4
240.00	21.4	1.0045	1.0047	0.0134	4.5	15.1	0.0034	16.0
1440.00	21.4	1.0040	1.0042	0.0134	4.0	15.2	0.0014	14.3

## Fractional Components

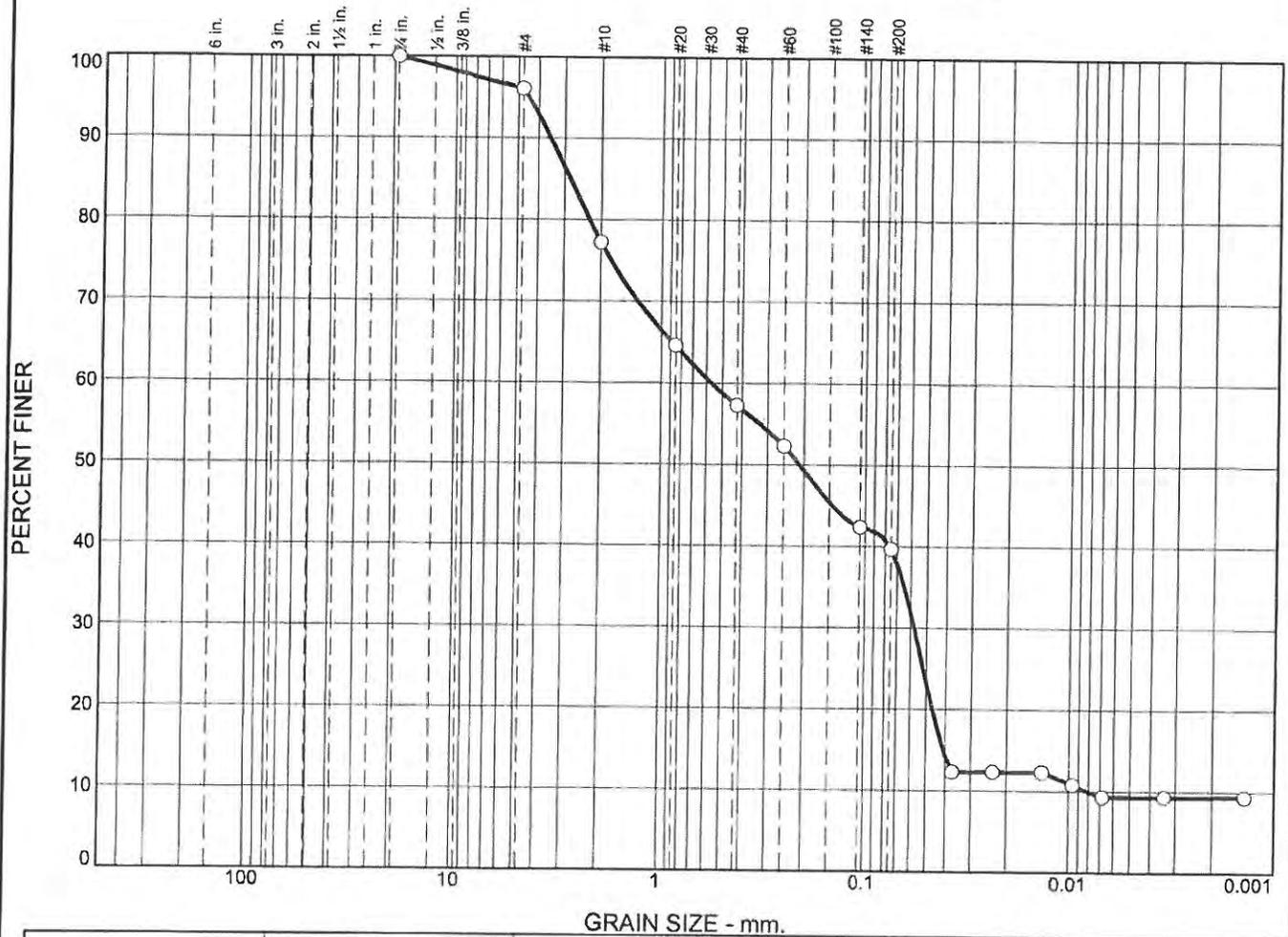
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	7.1	9.2	16.2	32.5	49.6	17.9	67.5

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
		0.0024	0.0075	0.0167	0.0415	0.0510	0.0619	0.2456	0.5512	1.3551	2.5432

Fineness Modulus
0.75

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# Particle Size Distribution Report



GRAIN SIZE - mm.											
%	+3"	% Gravel		% Sand			% Fines				
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay			
<input type="radio"/>	0.0	0.0	4.0	18.8	20.0	17.5	30.4	9.3			
<input checked="" type="checkbox"/>	Colloids	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input type="radio"/>				2.8211	0.5653	0.2104	0.0576	0.0409	0.0081	0.72	69.78

Material Description	USCS	AASHTO
<input type="radio"/>		

Project No. <input type="radio"/>	Client: <input type="radio"/>	Remarks:
Project: <input type="radio"/>		
<input type="radio"/> Source of Sample: VC-IRB-24-S2	Sample Number: L1736603-04	
Date: <input type="radio"/>	Alpha Analytical	
	Mansfield, MA	Figure

## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-24-S2

Sample Number: L1736603-04

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 18.70  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
18.70	0.00	0.75	0.00	0.00	100.0
		#4	0.74	0.00	96.0
		#10	3.52	0.00	77.2
		#20	2.37	0.00	64.5
		#40	1.37	0.00	57.2
		#60	0.93	0.00	52.2
		#140	1.85	0.00	42.4
		#200	0.50	0.00	39.7

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 39.7

Weight of hydrometer sample = 21.59

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0040	1.0042	0.0134	4.0	15.2	0.0370	12.3
5.00	21.4	1.0040	1.0042	0.0134	4.0	15.2	0.0234	12.3
15.00	21.4	1.0040	1.0042	0.0134	4.0	15.2	0.0135	12.3
30.00	21.4	1.0035	1.0037	0.0134	3.5	15.4	0.0096	10.8
60.00	21.4	1.0030	1.0032	0.0134	3.0	15.5	0.0068	9.3
240.00	21.4	1.0030	1.0032	0.0134	3.0	15.5	0.0034	9.3
1440.00	21.4	1.0030	1.0032	0.0134	3.0	15.5	0.0014	9.3

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	4.0	4.0	18.8	20.0	17.5	56.3	30.4	9.3	39.7

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0081	0.0409	0.0465	0.0576	0.0761	0.2104	0.5653	2.2759	2.8211	3.4972	4.4680

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
1.96	69.78	0.72

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## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-13-ALT-S1

Sample Number: L1736603-05

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 41.74  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
41.74	0.00	0.75	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.00	0.00	100.0
		#20	0.00	0.00	100.0
		#40	0.03	0.00	99.9
		#60	0.15	0.00	99.6
		#140	6.98	0.00	82.8
		#200	3.11	0.00	75.4

## Hydrometer Test Data

Hydrometer test uses material passing #200  
 Percent passing #200 based upon complete sample = 75.4  
 Weight of hydrometer sample = 43.11  
 Automatic temperature correction  
 Composite correction (fluid density and meniscus height) at 20 deg. C = 0  
 Meniscus correction only = 0.0  
 Specific gravity of solids = 2.65  
 Hydrometer type = 151H  
 Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0030	1.0032	0.0134	3.0	15.5	0.0373	8.9
5.00	21.4	1.0020	1.0022	0.0134	2.0	15.8	0.0238	6.1
15.00	21.4	1.0020	1.0022	0.0134	2.0	15.8	0.0137	6.1
30.00	21.4	1.0020	1.0022	0.0134	2.0	15.8	0.0097	6.1
60.00	21.4	1.0020	1.0022	0.0134	2.0	15.8	0.0069	6.1
240.00	21.4	1.0020	1.0022	0.0134	2.0	15.8	0.0034	6.1
1440.00	21.4	1.0020	1.0022	0.0134	2.0	15.8	0.0014	6.1

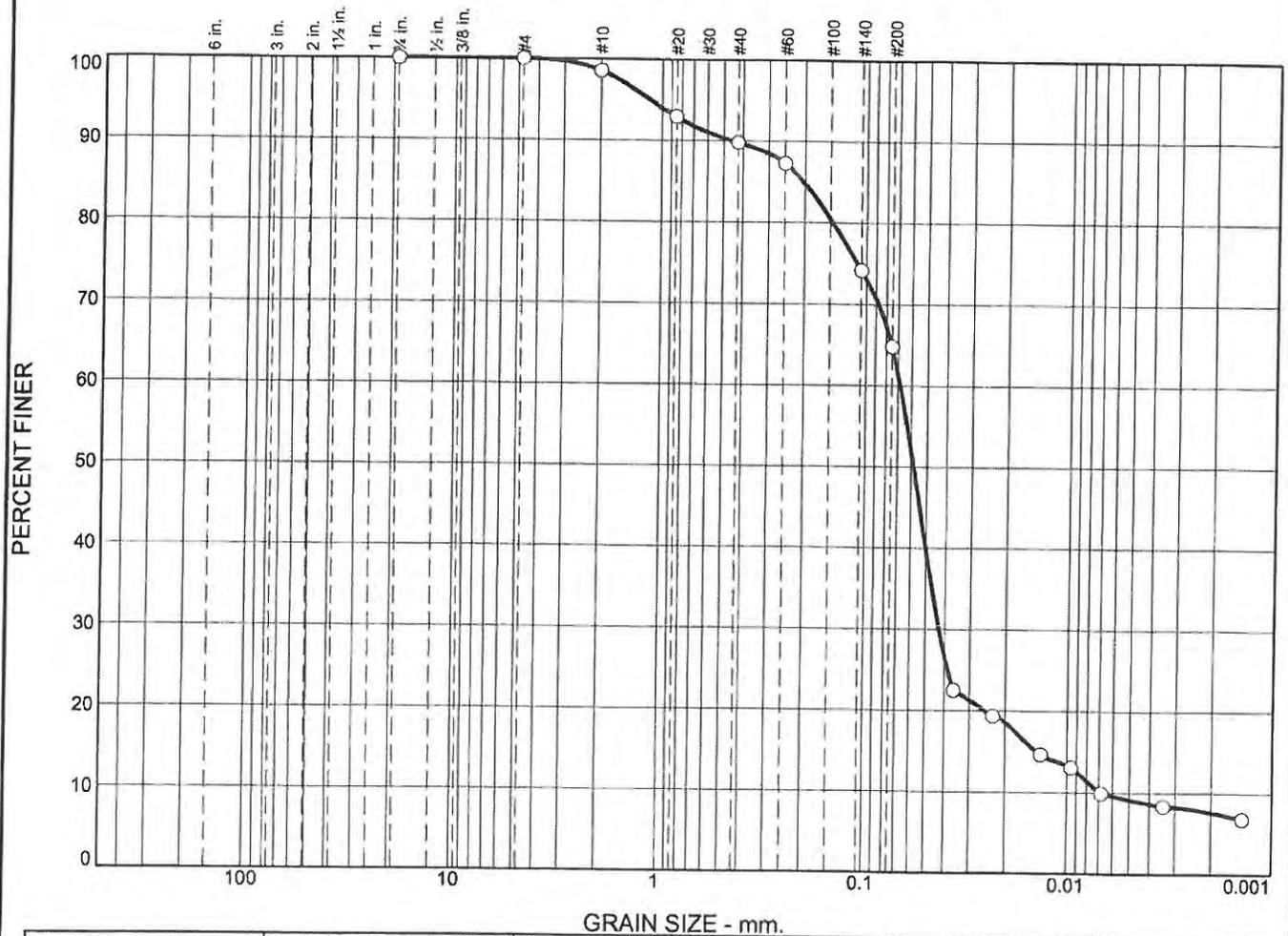
## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.1	24.5	24.6	69.3	6.1	75.4

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0381	0.0408	0.0432	0.0477	0.0521	0.0568	0.0623	0.0842	0.1235	0.1556	0.1922

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.11	1.64	0.96

# Particle Size Distribution Report



% +3"		% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
<input type="radio"/>	0.0	0.0	0.0	1.5	8.7	25.0	55.6	9.2

<input checked="" type="checkbox"/>	Colloids	LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
<input type="radio"/>				0.2038	0.0683	0.0582	0.0427	0.0141	0.0069	3.89	9.93

Material Description							USCS	AASHTO
<input type="radio"/>								

Project No. <input type="text"/>	Client: <input type="text"/>
Project: <input type="text"/>	
<input type="radio"/> Source of Sample: VC-IRB-13-ALT-S2	Sample Number: L1736603-06
Date: <input type="text"/>	
<b>Alpha Analytical</b>	
<b>Mansfield, MA</b>	

Remarks:

**Figure**

## GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2017

Location: VC-IRB-13-ALT-S2

Sample Number: L1736603-06

## Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 41.91  
 Tare Wt. = 0.00  
 Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
41.91	0.00	0.75	0.00	0.00	100.0
		#4	0.00	0.00	100.0
		#10	0.61	0.00	98.5
		#20	2.37	0.00	92.9
		#40	1.31	0.00	89.8
		#60	1.07	0.00	87.2
		#140	5.48	0.00	74.1
		#200	3.93	0.00	64.8

## Hydrometer Test Data

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 64.8

Weight of hydrometer sample = 33.14

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = 0

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 151H

Hydrometer effective depth equation:  $L = 16.294964 - 0.2645 \times R_m$ 

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	1.0070	1.0072	0.0134	7.0	14.4	0.0360	22.5
5.00	21.4	1.0060	1.0062	0.0134	6.0	14.7	0.0230	19.3
15.00	21.4	1.0045	1.0047	0.0134	4.5	15.1	0.0135	14.6
30.00	21.4	1.0040	1.0042	0.0134	4.0	15.2	0.0096	13.1
60.00	21.4	1.0030	1.0032	0.0134	3.0	15.5	0.0068	9.9
240.00	21.4	1.0025	1.0027	0.0134	2.5	15.6	0.0034	8.4
1440.00	21.4	1.0020	1.0022	0.0134	2.0	15.8	0.0014	6.8

## Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	1.5	8.7	25.0	35.2	55.6	9.2	64.8

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0069	0.0141	0.0251	0.0427	0.0502	0.0582	0.0683	0.1466	0.2038	0.4565	1.1534

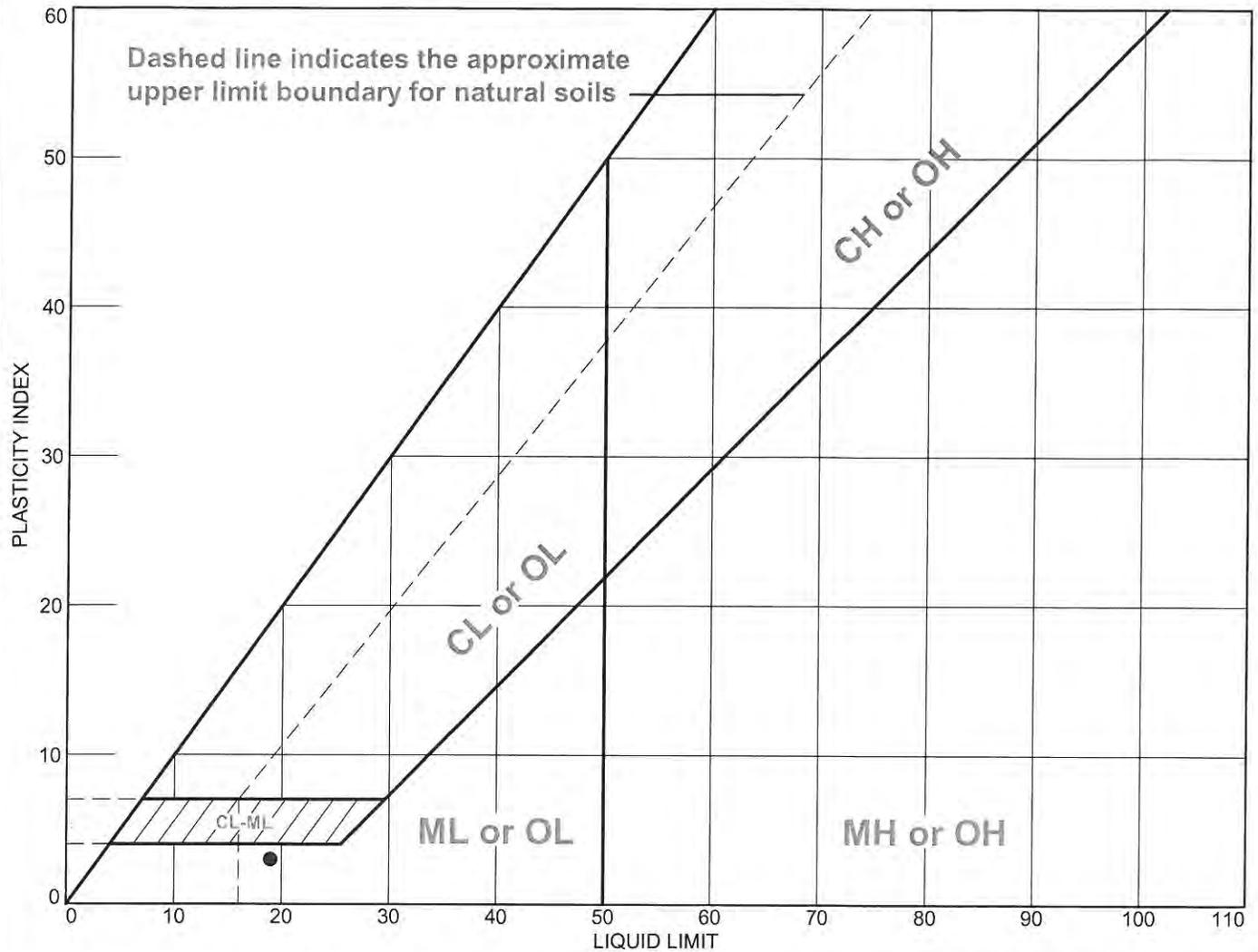
Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.46	9.93	3.89

Alpha Analytical

## **ASTM D4318-10**

### **Liquid Limit, Plastic Limit and Plasticity Index of Soils**

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	19	16	3	60.5	5.4	SP

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p>● <b>Source of Sample:</b> VC-IRB-11-ALT-S1      <b>Sample Number:</b> L1736603-01</p>	<p><b>Remarks:</b></p>
<p><b>Alpha Analytical</b></p> <p><b>Mansfield, MA</b></p>	

Figure

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/15/2017

Location: VC-IRB-11-ALT-S1

Sample Number: L1736603-01

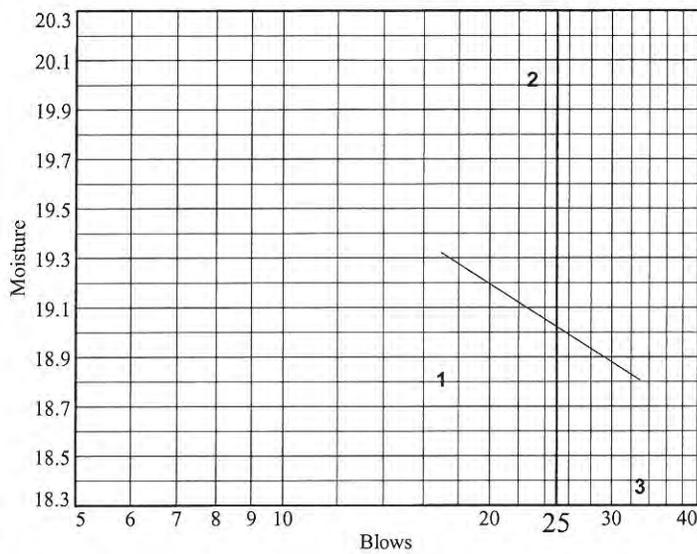
%<#40: 60.5

%<#200: 5.4

USCS: SP

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.956	6.356	6.45			
Dry+Tare	6.06	5.51	5.65			
Tare	1.297	1.285	1.297			
# Blows	17	23	33			
Moisture	18.8	20.0	18.4			

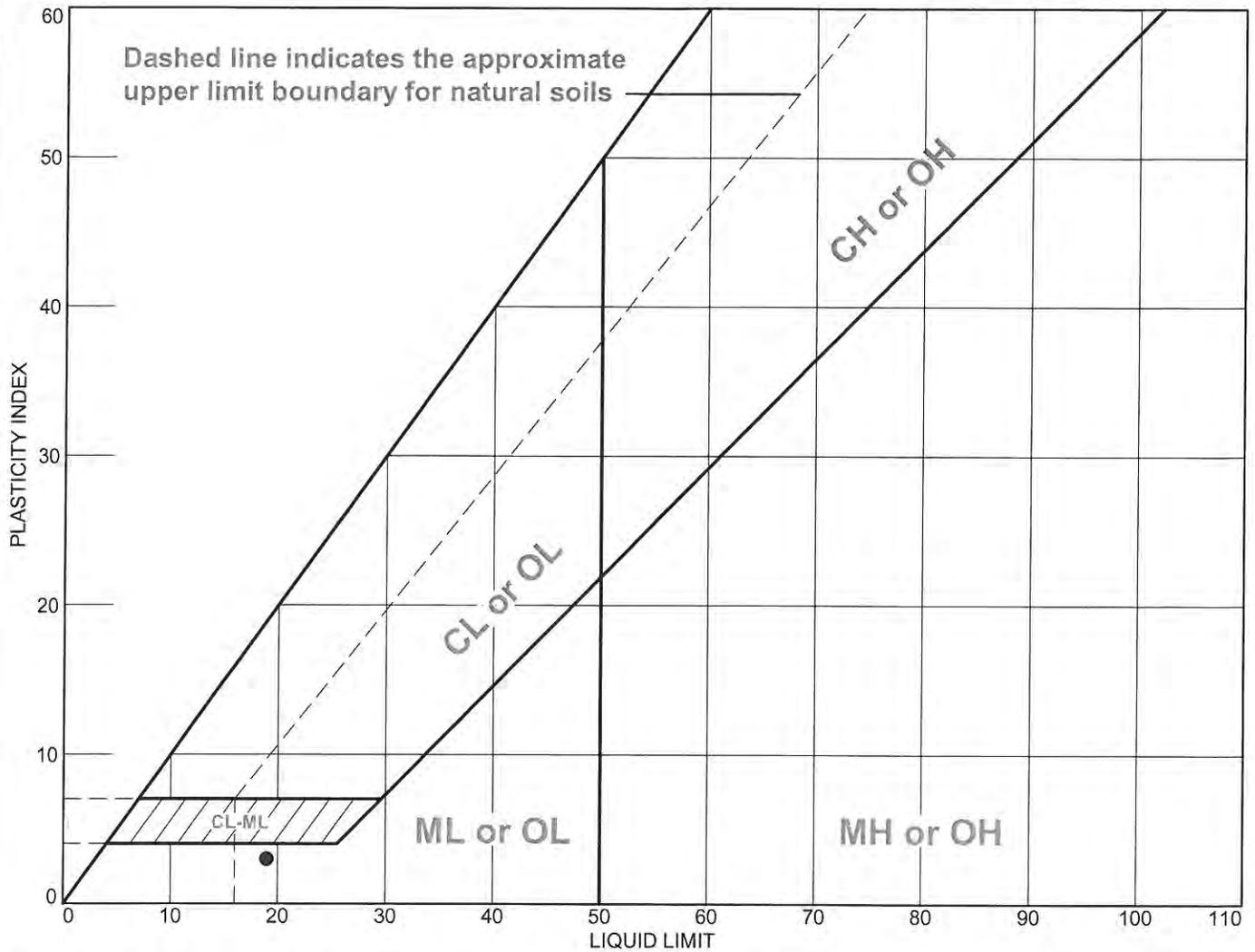


Liquid Limit= 19  
 Plastic Limit= 16  
 Plasticity Index= 3

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.911			
Dry+Tare	3.56			
Tare	1.309			
Moisture	15.6			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	19	16	3	60.5	5.4	SP

Project No.                      Client:

Project:

● Source of Sample: VC-IRB-11-ALT-S1              Sample Number: WG1063371-1

**Alpha Analytical**

**Mansfield, MA**

Remarks:

**Figure**



LIQUID AND PLASTIC LIMIT TEST DATA

11/15/2017

Location: VC-IRB-11-ALT-S1

Sample Number: WG1063371-1

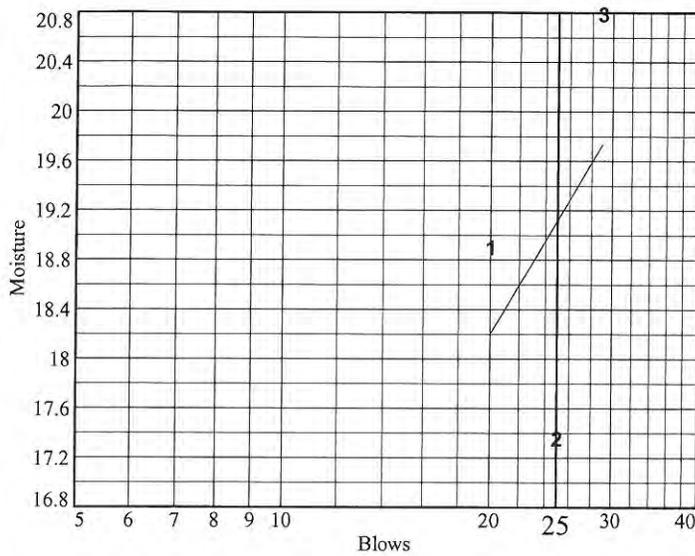
%<#40: 60.5

%<#200: 5.4

USCS: SP

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	6.877	6.323	7.194			
Dry+Tare	5.99	5.58	6.18			
Tare	1.298	1.3	1.303			
# Blows	20	25	29			
Moisture	18.9	17.4	20.8			

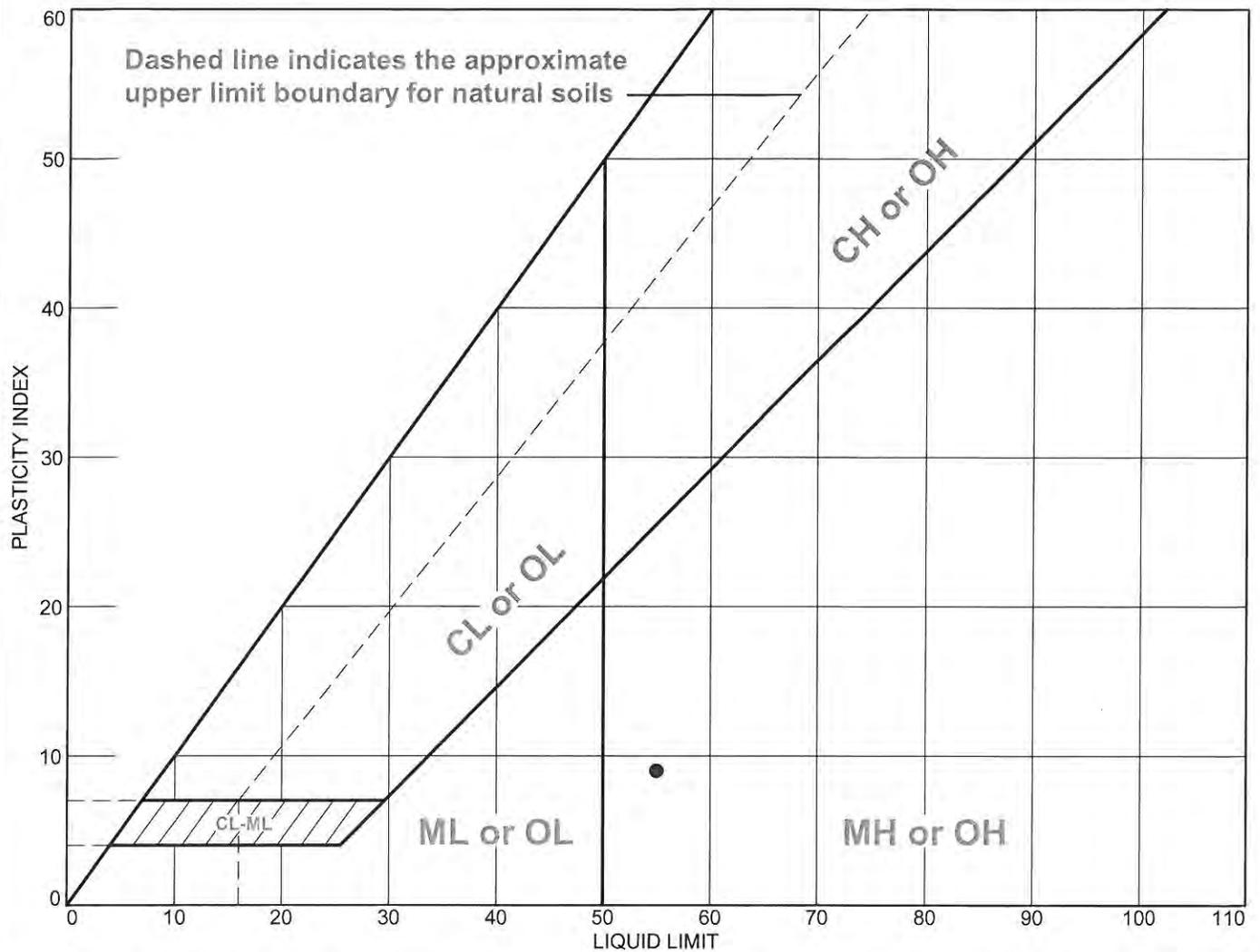


Liquid Limit= 19  
 Plastic Limit= 16  
 Plasticity Index= 3

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	4.024			
Dry+Tare	3.64			
Tare	1.297			
Moisture	16.4			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	55	46	9	67.8	48.7	SM

<p><b>Project No.</b> _____ <b>Client:</b> _____</p> <p><b>Project:</b> _____</p> <p>● <b>Source of Sample:</b> VC-IRB-11-ALT-S2      <b>Sample Number:</b> L1736603-02</p>	<p><b>Remarks:</b></p>   
<p><b>Alpha Analytical</b></p> <p><b>Mansfield, MA</b></p>	<p><b>Figure</b></p>

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/15/2017

Location: VC-IRB-11-ALT-S2

Sample Number: L1736603-02

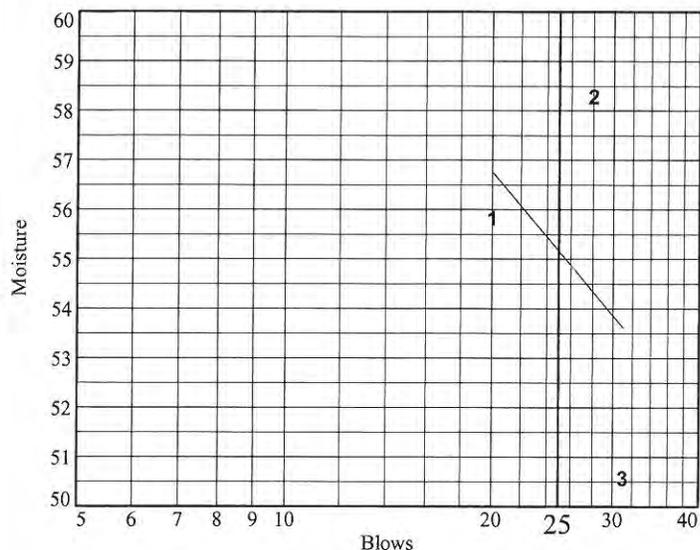
%<#40: 67.8

%<#200: 48.7

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.056	6.511	6.303			
Dry+Tare	4.35	4.59	4.62			
Tare	1.295	1.295	1.293			
# Blows	20	28	31			
Moisture	55.8	58.3	50.6			

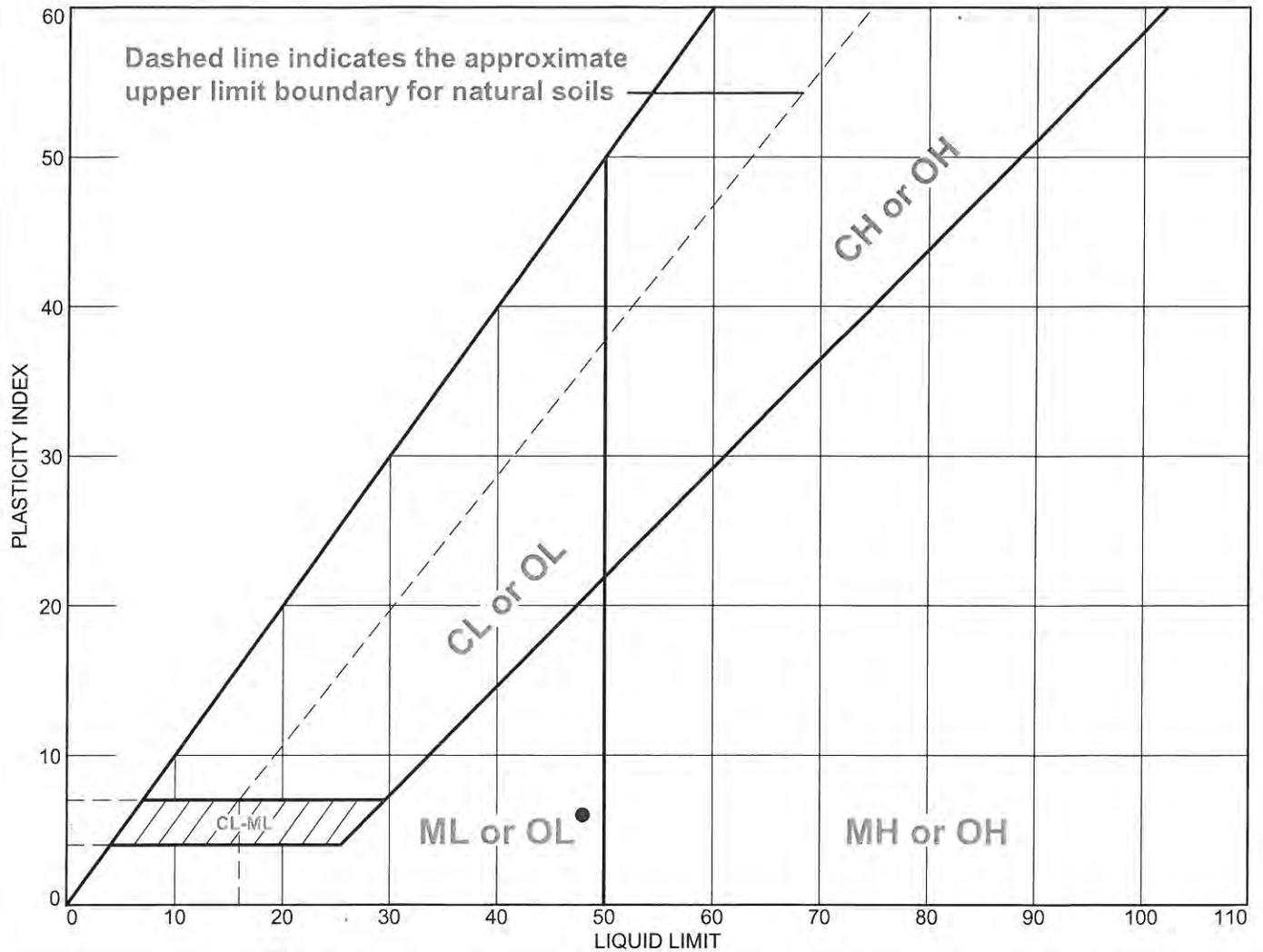


Liquid Limit= 55  
 Plastic Limit= 46  
 Plasticity Index= 9

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	2.85			
Dry+Tare	2.36			
Tare	1.301			
Moisture	46.3			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	48	42	6	83.7	67.5	OL

<p><b>Project No.</b>                      <b>Client:</b></p> <p><b>Project:</b></p> <p>● <b>Source of Sample:</b> VC-IRB-24-S1      <b>Sample Number:</b> L1736603-03</p>	<p><b>Remarks:</b></p>
<p><b>Alpha Analytical</b></p> <p><b>Mansfield, MA</b></p>	<p><b>Figure</b></p>

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/15/2017

Location: VC-IRB-24-S1

Sample Number: L1736603-03

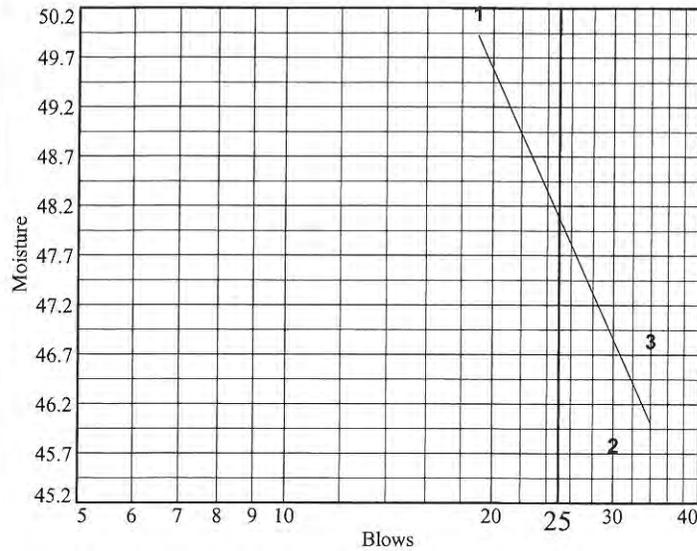
%<#40: 83.7

%<#200: 67.5

USCS: OL

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.193	7.235	6.781			
Dry+Tare	4.56	5.37	5.03			
Tare	1.304	1.297	1.292			
# Blows	19	30	34			
Moisture	50.2	45.8	46.8			

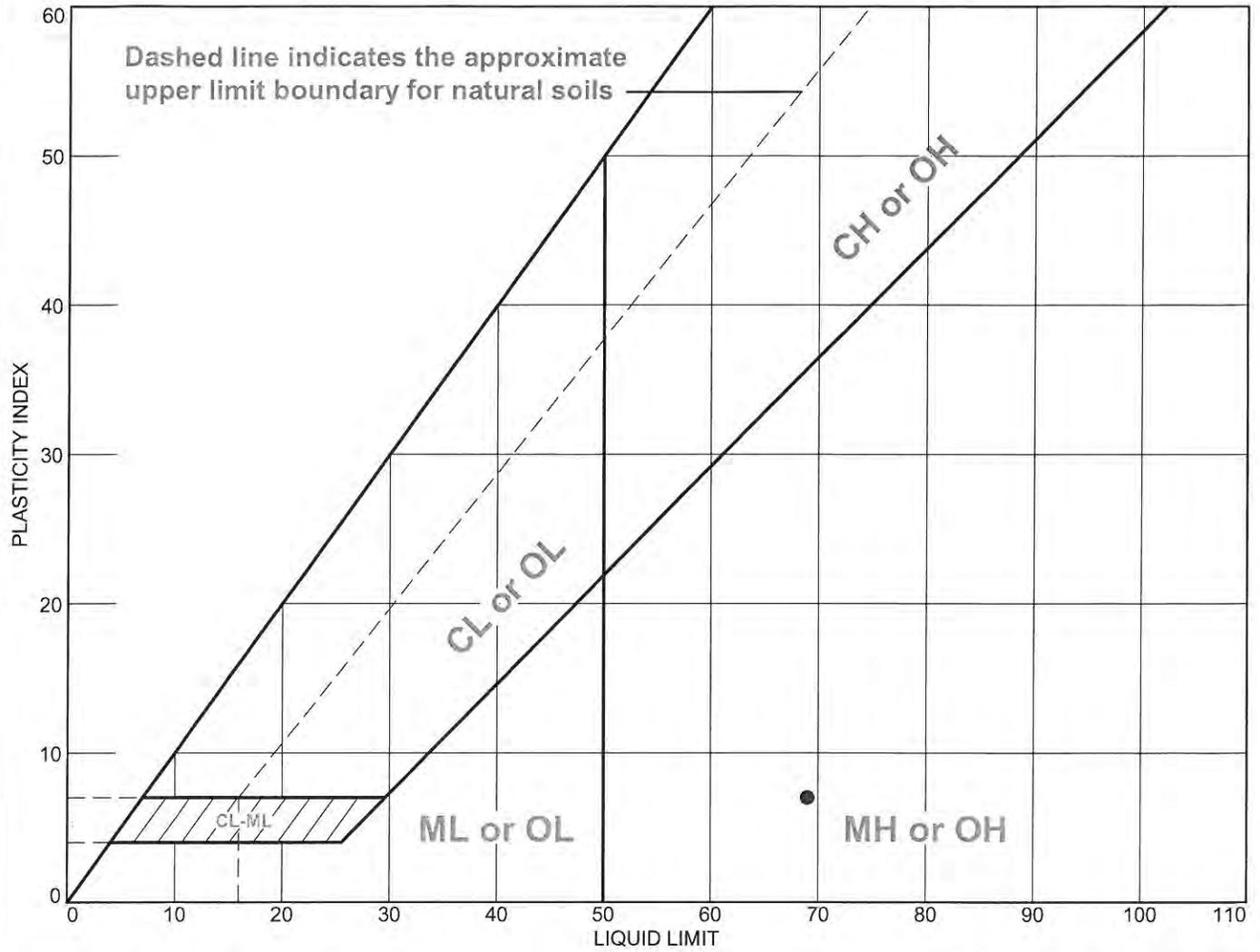


Liquid Limit= 48  
 Plastic Limit= 42  
 Plasticity Index= 6

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	3.105			
Dry+Tare	2.57			
Tare	1.298			
Moisture	42.1			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	69	62	7	57.2	39.7	SM

<b>Project No.</b> <b>Project:</b> ● <b>Source of Sample:</b> VC-IRB-24-S2	<b>Client:</b>  <b>Sample Number:</b> L1736603-04	<b>Remarks:</b>   <div style="text-align: center;"> <b>Alpha Analytical</b>  <b>Mansfield, MA</b> </div>
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Figure

**LIQUID AND PLASTIC LIMIT TEST DATA**

11/15/2017

Location: VC-IRB-24-S2

Sample Number: L1736603-04

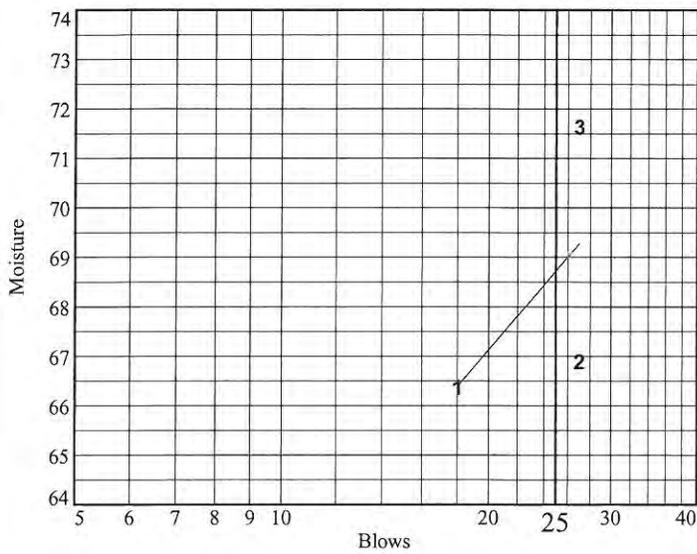
%<#40: 57.2

%<#200: 39.7

USCS: SM

**Liquid Limit Data**

Run No.	1	2	3	4	5	6
Wet+Tare	6.736	6.564	6.521			
Dry+Tare	4.57	4.45	4.34			
Tare	1.307	1.29	1.296			
# Blows	18	27	27			
Moisture	66.4	66.9	71.6			

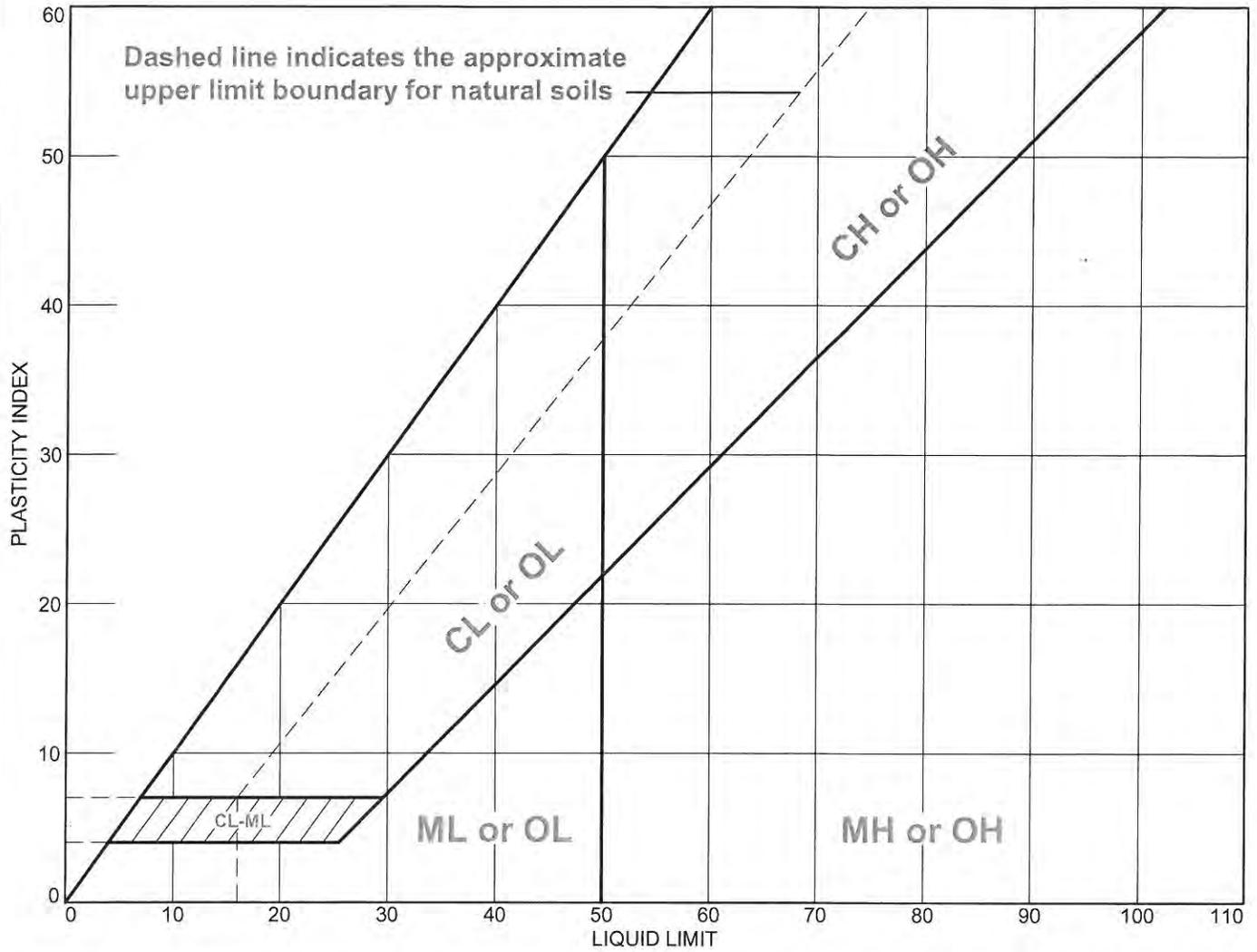


Liquid Limit= 69  
 Plastic Limit= 62  
 Plasticity Index= 7

**Plastic Limit Data**

Run No.	1	2	3	4
Wet+Tare	2.917			
Dry+Tare	2.3			
Tare	1.303			
Moisture	61.9			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	25	27	NP	99.9	75.4	OL

**Project No.** \_\_\_\_\_ **Client:** \_\_\_\_\_

**Project:** \_\_\_\_\_

● **Source of Sample:** VC-IRB-13-ALT-D1      **Sample Number:** L1736603-05

---

**Alpha Analytical**

**Mansfield, MA**

**Remarks:**

**Figure**



LIQUID AND PLASTIC LIMIT TEST DATA

11/15/2017

Location: VC-IRB-13-ALT-D1

Sample Number: L1736603-05

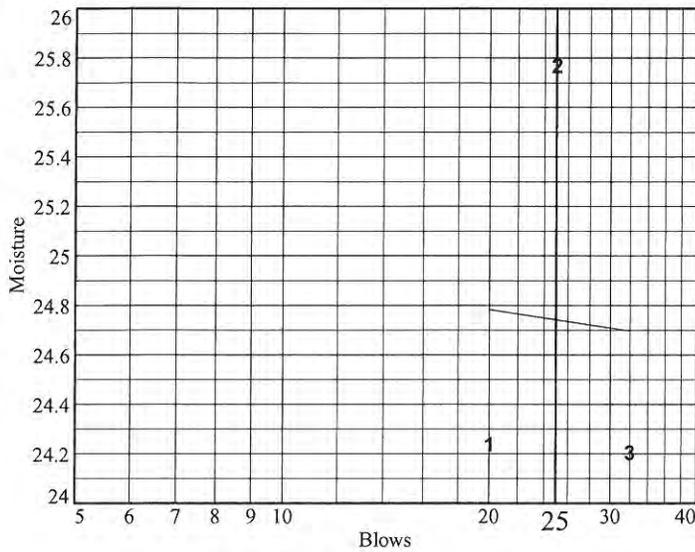
%<#40: 99.9

%<#200: 75.4

USCS: OL

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	8.705	7.968	8.788			
Dry+Tare	7.26	6.6	7.33			
Tare	1.299	1.292	1.307			
# Blows	20	25	32			
Moisture	24.2	25.8	24.2			

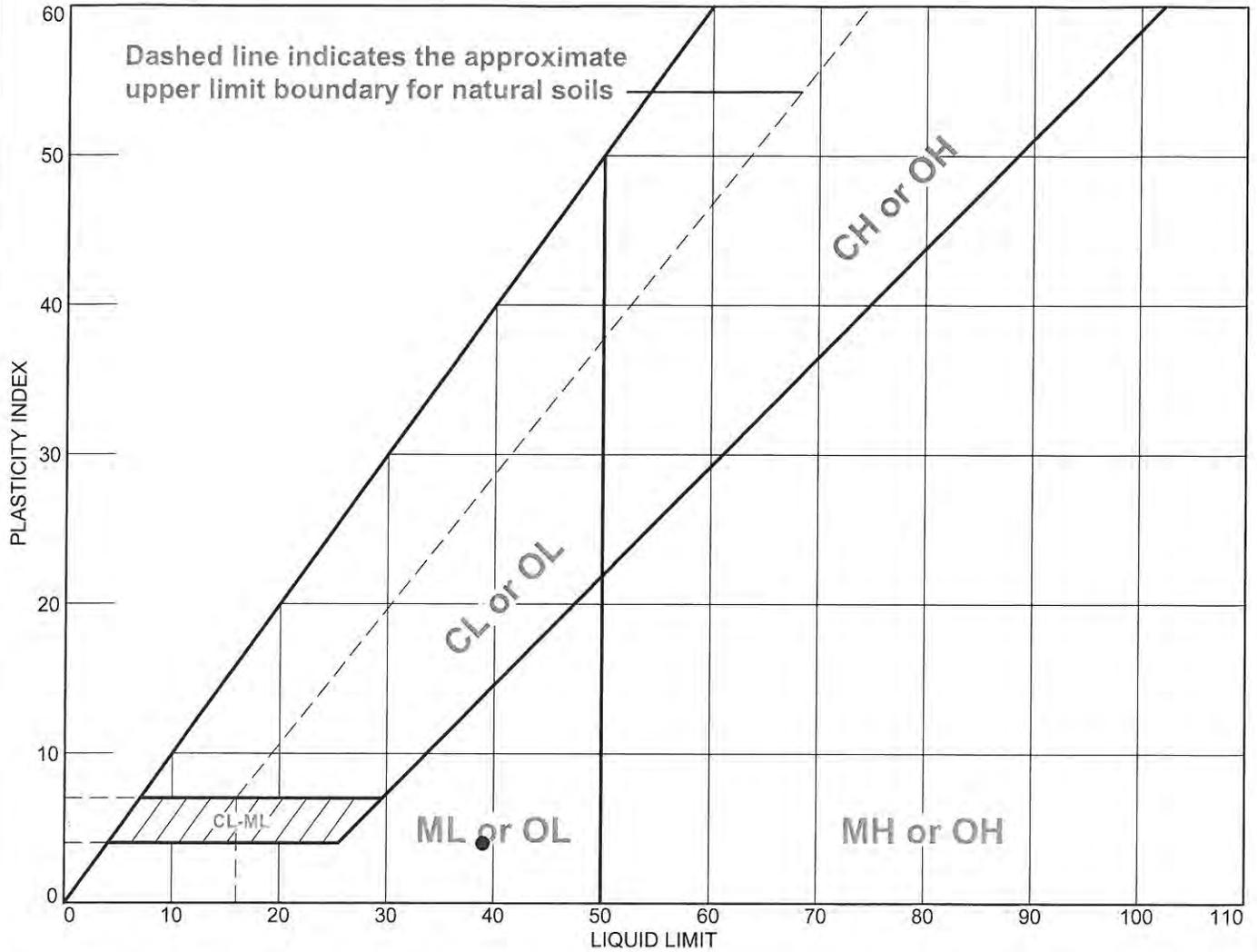


Liquid Limit= 25  
 Plastic Limit= 27  
 Plasticity Index= NP

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	5.256			
Dry+Tare	4.42			
Tare	1.309			
Moisture	26.9			

# LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	39	35	4	89.8	64.8	OL

Project No.	Client:	Remarks:
Project:		
● Source of Sample: VC-IRB-13-ALT-S2      Sample Number: L1736603-06		
Alpha Analytical		Figure
Mansfield, MA		

LIQUID AND PLASTIC LIMIT TEST DATA

11/15/2017

Location: VC-IRB-13-ALT-S2

Sample Number: L1736603-06

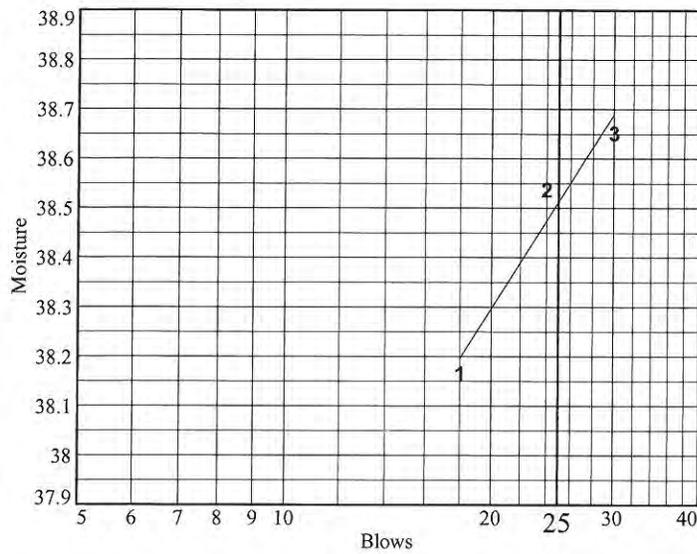
%<#40: 89.8

%<#200: 64.8

USCS: OL

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	6.824	6.439	6.823			
Dry+Tare	5.3	5.01	5.28			
Tare	1.307	1.302	1.288			
# Blows	18	24	30			
Moisture	38.2	38.5	38.7			



Liquid Limit= 39  
 Plastic Limit= 35  
 Plasticity Index= 4

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	3.118			
Dry+Tare	2.64			
Tare	1.289			
Moisture	35.4			

## Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624:** m/p-xylene, o-xylene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 300:** DW: Bromide

**EPA 6860:** NPW and SCM: Perchlorate

**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation

**EPA 9012B:** NPW: Total Cyanide

**EPA 9050A:** NPW: Specific Conductance

**SM3500:** NPW: Ferrous Iron

**SM4500:** NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**SM5310C:** DW: Dissolved Organic Carbon

### Mansfield Facility

**SM 2540D:** TSS

**EPA 3005A** NPW

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

**EPA 245.1 Hg.**

**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



# CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 10/31/17

ALPHA Job #: L1736003

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

### Project Information

Project Name: US WIND  
Project Location: Delaware  
Project #: U167-022  
Project Manager: Liz Gowell  
ALPHA Quote #: 3888

### Report Information - Data Deliverables

ADEX  EMAIL  Same as Client info PO #:

### Billing Information

### Client Information

Client: ESS Group, Inc.  
Address: 1005<sup>th</sup> Ave, 5<sup>th</sup> FLR  
Waltham, MA 02451  
Phone: 781-419-7718  
Email: mphillips@cssgroup.com

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
Date Due:

### Regulatory Requirements & Project Information Requirements

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program Delaware Criteria Sediments

### Additional Project Information:

*\* See Liz Porta for Physical and Chemical Analysis parameters*

ANALYSIS	VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH	METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	PCB <input type="checkbox"/> PEST	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint	SAMPLE INFO Filtration <input type="checkbox"/> Field <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do	TOTAL # BOTTLES
	Physical Analysis Chemical Analysis								

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
<u>10/30/17 .01</u>	<u>VC-IRB-11-ALT-S1</u>	<u>10/19/17</u>	<u>1540</u>	<u>SE</u>	<u>ML+SR</u>
<u>.02</u>	<u>VC-IRB-11-ALT-S2</u>		<u>1550</u>		
<u>.03</u>	<u>VC-IRB-24-S1</u>		<u>1445</u>		
<u>.04</u>	<u>VC-IRB-24-S2</u>		<u>1455</u>		
<u>.05</u>	<u>VC-IRB-13-ALT-S1</u>		<u>1915</u>		
<u>.06</u>	<u>VC-IRB-13-ALT-S2</u>		<u>1925</u>		

**Container Type**  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

**Preservative**  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type	<u>P/A</u>
Preservative	<u>A/A</u>

Relinquished By: M. Phillips Date/Time: 10/11/17 11:30  
Received By: ALV Date/Time: 10/11/17 2:00  
10/12/17 10:00

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
FORM NO: 01-01 (rev. 12-Mar-2012)

SUB UPS: CAPE FEAR, NC

# CHAIN OF CUSTODY

PAGE 1 OF 1



Westborough, MA    Mansfield, MA  
 TEL: 508-896-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3268

### Client Information

Client: Alpha Analytical Lab

Address: 320 Forbes Blvd.

Mansfield, Ma 02048

Phone: 508-822-9300

Fax:

Email: subreports@alphalab.com, eporta@alphalab.com

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Please include Alpha job #L1736603 on this report.

### Project Information

Project Name:

Project Location: DE

Project #:

Project Manager: Elizabeth Porta

ALPHA Quote #:

### Turn-Around Time

Standard     Rush (ONLY IF PRE-APPROVED)

Due Date:    Time:

Date Rec'd in Lab:

ALPHA Job #: L1736603

### Report Information Data Deliverables

FAX     EMAIL  
 ADEx     Add'l Deliverables

### Billing Information

Same as Client info    PO #:

### Regulatory Requirements/Report Limits

State/Fed Program    Criteria

### MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

Yes     No    Are MCP Analytical Methods Required?  
 Yes     No    Are CT RCP (Reasonable Confidence Protocols) Required?

### ANALYSIS

Dioxin 1613B	Pest 1668													Sample Specific Comments	TOTAL # BOTTLES
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736603-01	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736603-02	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736603-03	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736603-04	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736603-05	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	L1736603-06	2
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

SAMPLE HANDLING  
 Filtration  
 Done  
 Not Needed  
 Lab to do  
 Preservation  
 Lab to do  
 (Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
	VC-IRB-11-ALT-S1	10/10/17	15:40	Sediment	
	VC-IRB-11-ALT-S2	10/10/17	15:50	Sediment	
	VC-IRB-24-S1	10/10/17	14:45	Sediment	
	VC-IRB-24-S2	10/10/17	14:55	Sediment	
	VC-IRB-13-ALT-S1	10/10/17	19:15	Sediment	
	VC-IRB-13-ALT-S2	10/10/17	19:25	Sediment	

PLEASE ANSWER QUESTIONS ABOVE!

Container Type    A

Preservative    A

**IS YOUR PROJECT  
 MA MCP or CT RCP?**

Relinquished By:

Date/Time

Received By:

Date/Time

*Elizabeth Porta - APC*

10/17/17 1700

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(1)  
 REV. 30-JUL-07

November 15, 2017

Ms. Elizabeth Porta  
Alpha Analytical Laboratory  
8 Walkup Drive  
Westborough, Massachusetts 01581

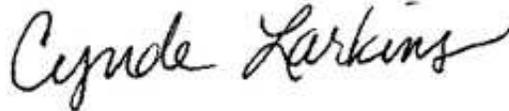
Re: US Wind DXN and PCBs  
Work Order: 11537  
SDG: L1736603

Dear Ms. Porta:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 18, 2017. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins  
Project Manager

Enclosures





**SAMPLE RECEIPT CHECKLIST**  
Cape Fear Analytical

Client: <u>ALPH</u>	Work Order: <u>11537</u>
Shipping Company: <u>UPS</u>	Date/Time Received: <u>18OCT17 1020</u>

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?			✓
Samples < 2x background?			✓

\* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: \_\_\_\_\_

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken    damaged container    leaking container    other(describe)
2 Chain of Custody documents included with shipment?	✓			
3 Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags    blue ice    dry ice    none    other (describe) <u>5.6° - 4.9 = 0.7° C</u>
4 Aqueous samples found to have visible solids?		✓		Sample IDs, containers affected:
5 Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: If preservative added, Lot#:
6 Samples requiring preservation have no residual chlorine?		✓		Sample IDs, containers affected: If preservative added, Lot#:
7 Samples received within holding time?	✓			Sample IDs, tests affected:
8 Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9 Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10 Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected:
11 COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: CP      Date: 18OCT17

# **High Resolution Dioxins and Furans Analysis**

# Case Narrative

**HDOX Case Narrative**  
**Alpha Analytical Laboratory (ALPH)**  
**SDG L1736603**  
**Work Order 11537**

**Method/Analysis Information**

**Product:** Dioxins/Furans by EPA Method 1613B in Solids  
**Analytical Method:** EPA Method 1613B  
**Extraction Method:** SW846 3540C  
**Analytical Batch Number:** 36101  
**Clean Up Batch Number:** 36100  
**Extraction Batch Number:** 36099

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in Method 1613B:

<b>Sample ID</b>	<b>Client ID</b>
11537001	VC-IRB-11-ALT-S1
11537002	VC-IRB-11-ALT-S2
11537003	VC-IRB-24-S1
11537004	VC-IRB-24-S2
11537005	VC-IRB-13-ALT-S1
11537006	VC-IRB-13-ALT-S2
12019934	Method Blank (MB)
12019935	Laboratory Control Sample (LCS)
12019936	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

**Calibration Information**

**Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

### **Quality Control (QC) Information**

#### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Surrogate Recoveries**

All surrogate recoveries were within the established acceptance criteria for this SDG.

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

#### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

#### **QC Sample Designation**

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

### **Technical Information**

#### **Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

#### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

#### **Sample Dilutions**

The samples in this SDG did not require dilutions.

#### **Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

## **Miscellaneous Information**

### **Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

### **Manual Integrations**

Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

### **Sample preparation**

No difficulties were encountered during sample preparation.

## **Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary

## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Qualifier Definition Report for

ALPH001 Alpha Analytical Laboratory

Client SDG: L1736603 CFA Work Order: 11537

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

**Signature:** 

**Name:** Heather Patterson

**Date:** 14 NOV 2017

**Title:** Group Leader



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537001	<b>Date Collected:</b> 10/10/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 19.4
<b>Client ID:</b> VC-IRB-11-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 21:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 12.52 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.991	pg/g	0.991
40321-76-4	1,2,3,7,8-PeCDD	U	4.96	pg/g	4.96
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.96	pg/g	4.96
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.96	pg/g	4.96
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.96	pg/g	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD		7.27	pg/g	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		109	pg/g	9.91
51207-31-9	2,3,7,8-TCDF	U	0.991	pg/g	0.991
57117-41-6	1,2,3,7,8-PeCDF	U	4.96	pg/g	4.96
57117-31-4	2,3,4,7,8-PeCDF	U	4.96	pg/g	4.96
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.96	pg/g	4.96
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.96	pg/g	4.96
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.96	pg/g	4.96
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.96	pg/g	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.96	pg/g	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.96	pg/g	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.91	pg/g	9.91
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	0.991	pg/g	0.991
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.96	pg/g	4.96
34465-46-8	Total Hexachlorodibenzo-p-dioxin		7.18	pg/g	4.96
37871-00-4	Total Heptachlorodibenzo-p-dioxin		24.1	pg/g	4.96
30402-14-3	Total Tetrachlorodibenzofuran	U	0.991	pg/g	0.991
30402-15-4	Total Pentachlorodibenzofuran	U	4.96	pg/g	4.96
55684-94-1	Total Hexachlorodibenzofuran	U	4.96	pg/g	4.96
38998-75-3	Total Heptachlorodibenzofuran	U	4.96	pg/g	4.96
3333-30-0	TEQ WHO2005 ND=0		0.105	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.73	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		171	198	pg/g	86.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		206	198	pg/g	104	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		175	198	pg/g	88.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		184	198	pg/g	92.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		195	198	pg/g	98.4	(23%-140%)
13C-OCDD		384	396	pg/g	97.0	(17%-157%)
13C-2,3,7,8-TCDF		169	198	pg/g	85.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		197	198	pg/g	99.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		209	198	pg/g	106	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		168	198	pg/g	84.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		177	198	pg/g	89.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		176	198	pg/g	88.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		185	198	pg/g	93.2	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537001	<b>Date Collected:</b> 10/10/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 19.4
<b>Client ID:</b> VC-IRB-11-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 21:07	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 12.52 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			183	198	pg/g	92.2 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			190	198	pg/g	95.7 (26%-138%)
37Cl-2,3,7,8-TCDD			18.3	19.8	pg/g	92.5 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 21:54	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 20.86 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.998	pg/g	0.998
40321-76-4	1,2,3,7,8-PeCDD	U	4.99	pg/g	4.99
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.99	pg/g	4.99
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.99	pg/g	4.99
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.99	pg/g	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD		15.3	pg/g	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		197	pg/g	9.98
51207-31-9	2,3,7,8-TCDF	U	0.998	pg/g	0.998
57117-41-6	1,2,3,7,8-PeCDF	U	4.99	pg/g	4.99
57117-31-4	2,3,4,7,8-PeCDF	U	4.99	pg/g	4.99
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.99	pg/g	4.99
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.99	pg/g	4.99
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.99	pg/g	4.99
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.99	pg/g	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.99	pg/g	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.99	pg/g	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.98	pg/g	9.98
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	0.998	pg/g	0.998
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.99	pg/g	4.99
34465-46-8	Total Hexachlorodibenzo-p-dioxin		28.6	pg/g	4.99
37871-00-4	Total Heptachlorodibenzo-p-dioxin		57.7	pg/g	4.99
30402-14-3	Total Tetrachlorodibenzofuran		1.12	pg/g	0.998
30402-15-4	Total Pentachlorodibenzofuran	U	4.99	pg/g	4.99
55684-94-1	Total Hexachlorodibenzofuran	U	4.99	pg/g	4.99
38998-75-3	Total Heptachlorodibenzofuran	U	4.99	pg/g	4.99
3333-30-0	TEQ WHO2005 ND=0		0.212	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.88	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		176	200	pg/g	88.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		210	200	pg/g	105	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		179	200	pg/g	89.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		183	200	pg/g	91.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		202	200	pg/g	101	(23%-140%)
13C-OCDD		393	399	pg/g	98.4	(17%-157%)
13C-2,3,7,8-TCDF		168	200	pg/g	84.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		203	200	pg/g	102	(24%-185%)
13C-2,3,4,7,8-PeCDF		214	200	pg/g	107	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		167	200	pg/g	83.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		177	200	pg/g	88.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		180	200	pg/g	90.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		187	200	pg/g	93.7	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 21:54	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 20.86 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			193	200	pg/g	96.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			191	200	pg/g	96.0 (26%-138%)
37Cl-2,3,7,8-TCDD			17.4	20.0	pg/g	87.0 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537003	<b>Date Collected:</b> 10/10/2017 14:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 45.3
<b>Client ID:</b> VC-IRB-24-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 22:41	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 18.34 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.997	pg/g	0.997
40321-76-4	1,2,3,7,8-PeCDD	U	4.98	pg/g	4.98
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.98	pg/g	4.98
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.98	pg/g	4.98
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.98	pg/g	4.98
35822-46-9	1,2,3,4,6,7,8-HpCDD		44.5	pg/g	4.98
3268-87-9	1,2,3,4,6,7,8,9-OCDD		763	pg/g	9.97
51207-31-9	2,3,7,8-TCDF	U	0.997	pg/g	0.997
57117-41-6	1,2,3,7,8-PeCDF	U	4.98	pg/g	4.98
57117-31-4	2,3,4,7,8-PeCDF	U	4.98	pg/g	4.98
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.98	pg/g	4.98
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.98	pg/g	4.98
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.98	pg/g	4.98
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.98	pg/g	4.98
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.98	pg/g	4.98
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.98	pg/g	4.98
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.97	pg/g	9.97
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		2.80	pg/g	0.997
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.98	pg/g	4.98
34465-46-8	Total Hexachlorodibenzo-p-dioxin		59.2	pg/g	4.98
37871-00-4	Total Heptachlorodibenzo-p-dioxin		164	pg/g	4.98
30402-14-3	Total Tetrachlorodibenzofuran		1.29	pg/g	0.997
30402-15-4	Total Pentachlorodibenzofuran	U	4.98	pg/g	4.98
55684-94-1	Total Hexachlorodibenzofuran	U	4.98	pg/g	4.98
38998-75-3	Total Heptachlorodibenzofuran	U	4.98	pg/g	4.98
3333-30-0	TEQ WHO2005 ND=0		0.674	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.33	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		156	199	pg/g	78.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		196	199	pg/g	98.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		169	199	pg/g	84.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		177	199	pg/g	88.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		180	199	pg/g	90.1	(23%-140%)
13C-OCDD		377	399	pg/g	94.6	(17%-157%)
13C-2,3,7,8-TCDF		155	199	pg/g	77.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		188	199	pg/g	94.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		202	199	pg/g	101	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		158	199	pg/g	79.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		164	199	pg/g	82.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		166	199	pg/g	83.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		169	199	pg/g	84.8	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537003	<b>Date Collected:</b> 10/10/2017 14:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 45.3
<b>Client ID:</b> VC-IRB-24-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 22:41	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 18.34 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			173	199	pg/g	87.0 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			183	199	pg/g	91.7 (26%-138%)
37Cl-2,3,7,8-TCDD			16.9	19.9	pg/g	84.8 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537004	<b>Date Collected:</b> 10/10/2017 14:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 64.1
<b>Client ID:</b> VC-IRB-24-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 23:28	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 25.08 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1.11	pg/g	1.11
40321-76-4	1,2,3,7,8-PeCDD	U	5.55	pg/g	5.55
39227-28-6	1,2,3,4,7,8-HxCDD	U	5.55	pg/g	5.55
57653-85-7	1,2,3,6,7,8-HxCDD	U	5.55	pg/g	5.55
19408-74-3	1,2,3,7,8,9-HxCDD	U	5.55	pg/g	5.55
35822-46-9	1,2,3,4,6,7,8-HpCDD		6.72	pg/g	5.55
3268-87-9	1,2,3,4,6,7,8,9-OCDD		81.5	pg/g	11.1
51207-31-9	2,3,7,8-TCDF	U	1.11	pg/g	1.11
57117-41-6	1,2,3,7,8-PeCDF	U	5.55	pg/g	5.55
57117-31-4	2,3,4,7,8-PeCDF	U	5.55	pg/g	5.55
70648-26-9	1,2,3,4,7,8-HxCDF	U	5.55	pg/g	5.55
57117-44-9	1,2,3,6,7,8-HxCDF	U	5.55	pg/g	5.55
60851-34-5	2,3,4,6,7,8-HxCDF	U	5.55	pg/g	5.55
72918-21-9	1,2,3,7,8,9-HxCDF	U	5.55	pg/g	5.55
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5.55	pg/g	5.55
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5.55	pg/g	5.55
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	11.1	pg/g	11.1
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1.11	pg/g	1.11
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5.55	pg/g	5.55
34465-46-8	Total Hexachlorodibenzo-p-dioxin		9.71	pg/g	5.55
37871-00-4	Total Heptachlorodibenzo-p-dioxin		6.72	pg/g	5.55
30402-14-3	Total Tetrachlorodibenzofuran	U	1.11	pg/g	1.11
30402-15-4	Total Pentachlorodibenzofuran	U	5.55	pg/g	5.55
55684-94-1	Total Hexachlorodibenzofuran	U	5.55	pg/g	5.55
38998-75-3	Total Heptachlorodibenzofuran	U	5.55	pg/g	5.55
3333-30-0	TEQ WHO2005 ND=0		0.0917	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.39	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		167	222	pg/g	75.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		206	222	pg/g	92.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		167	222	pg/g	75.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		178	222	pg/g	80.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		181	222	pg/g	81.7	(23%-140%)
13C-OCDD		374	444	pg/g	84.2	(17%-157%)
13C-2,3,7,8-TCDF		162	222	pg/g	72.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		199	222	pg/g	89.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		209	222	pg/g	94.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		166	222	pg/g	74.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		163	222	pg/g	73.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		173	222	pg/g	77.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		172	222	pg/g	77.3	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537004	<b>Date Collected:</b> 10/10/2017 14:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 64.1
<b>Client ID:</b> VC-IRB-24-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 23:28	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-11		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 25.08 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			181	222	pg/g	81.4 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			181	222	pg/g	81.7 (26%-138%)
37Cl-2,3,7,8-TCDD			17.1	22.2	pg/g	77.2 (35%-197%)

**Comments:**  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537005	<b>Date Collected:</b> 10/10/2017 19:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 16.8
<b>Client ID:</b> VC-IRB-13-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/08/2017 00:15	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-12		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 12.28 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	0.979	pg/g	0.979
40321-76-4	1,2,3,7,8-PeCDD	U	4.89	pg/g	4.89
39227-28-6	1,2,3,4,7,8-HxCDD	U	4.89	pg/g	4.89
57653-85-7	1,2,3,6,7,8-HxCDD	U	4.89	pg/g	4.89
19408-74-3	1,2,3,7,8,9-HxCDD	U	4.89	pg/g	4.89
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	4.89	pg/g	4.89
3268-87-9	1,2,3,4,6,7,8,9-OCDD		20.9	pg/g	9.79
51207-31-9	2,3,7,8-TCDF	U	0.979	pg/g	0.979
57117-41-6	1,2,3,7,8-PeCDF	U	4.89	pg/g	4.89
57117-31-4	2,3,4,7,8-PeCDF	U	4.89	pg/g	4.89
70648-26-9	1,2,3,4,7,8-HxCDF	U	4.89	pg/g	4.89
57117-44-9	1,2,3,6,7,8-HxCDF	U	4.89	pg/g	4.89
60851-34-5	2,3,4,6,7,8-HxCDF	U	4.89	pg/g	4.89
72918-21-9	1,2,3,7,8,9-HxCDF	U	4.89	pg/g	4.89
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	4.89	pg/g	4.89
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	4.89	pg/g	4.89
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	9.79	pg/g	9.79
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	0.979	pg/g	0.979
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	4.89	pg/g	4.89
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	4.89	pg/g	4.89
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	4.89	pg/g	4.89
30402-14-3	Total Tetrachlorodibenzofuran	U	0.979	pg/g	0.979
30402-15-4	Total Pentachlorodibenzofuran	U	4.89	pg/g	4.89
55684-94-1	Total Hexachlorodibenzofuran	U	4.89	pg/g	4.89
38998-75-3	Total Heptachlorodibenzofuran	U	4.89	pg/g	4.89
3333-30-0	TEQ WHO2005 ND=0		0.00626	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.59	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		168	196	pg/g	85.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		200	196	pg/g	102	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		169	196	pg/g	86.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		188	196	pg/g	96.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		192	196	pg/g	98.0	(23%-140%)
13C-OCDD		383	391	pg/g	97.7	(17%-157%)
13C-2,3,7,8-TCDF		167	196	pg/g	85.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		192	196	pg/g	98.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		201	196	pg/g	103	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		171	196	pg/g	87.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		172	196	pg/g	87.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		177	196	pg/g	90.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		184	196	pg/g	94.0	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537005	<b>Date Collected:</b> 10/10/2017 19:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 16.8
<b>Client ID:</b> VC-IRB-13-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/08/2017 00:15	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-12		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 12.28 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			179	196	pg/g	91.3 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			188	196	pg/g	96.2 (26%-138%)
37Cl-2,3,7,8-TCDD			15.4	19.6	pg/g	78.9 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/08/2017 01:02	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 15.71 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		42.5	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		613	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin		3.35	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin		68.9	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin		165	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran		1.30	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.609	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		6.29	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		166	200	pg/g	83.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		201	200	pg/g	100	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		168	200	pg/g	83.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	200	pg/g	84.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		183	200	pg/g	91.5	(23%-140%)
13C-OCDD		376	400	pg/g	94.0	(17%-157%)
13C-2,3,7,8-TCDF		166	200	pg/g	82.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		195	200	pg/g	97.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		206	200	pg/g	103	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		155	200	pg/g	77.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		165	200	pg/g	82.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		164	200	pg/g	82.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		174	200	pg/g	87.0	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/08/2017 01:02	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 15.71 g	

CAS No.	Parmname	Qual	Result	Units	PQL
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Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF		175	200	pg/g	87.6	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		178	200	pg/g	88.8	(26%-138%)
37Cl-2,3,7,8-TCDD		16.9	20.0	pg/g	84.4	(35%-197%)

**Comments:**

- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

# Quality Control Summary

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12019935	LCS for batch 36099	13C-2,3,7,8-TCDD		79.1	(20%-175%)
		13C-1,2,3,7,8-PeCDD		97.1	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		90.2	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		89.6	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		91.5	(22%-166%)
		13C-OCDD		86.5	(13%-199%)
		13C-2,3,7,8-TCDF		79.8	(22%-152%)
		13C-1,2,3,7,8-PeCDF		94.5	(21%-192%)
		13C-2,3,4,7,8-PeCDF		96.3	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		84.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		85.8	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		87.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		89.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		88.7	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		89.2	(20%-186%)
		37Cl-2,3,7,8-TCDD		81.3	(31%-191%)
12019936	LCSD for batch 36099	13C-2,3,7,8-TCDD		80.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		99.6	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		87.1	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		92.4	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		96.0	(22%-166%)
		13C-OCDD		95.9	(13%-199%)
		13C-2,3,7,8-TCDF		78.3	(22%-152%)
		13C-1,2,3,7,8-PeCDF		95.0	(21%-192%)
		13C-2,3,4,7,8-PeCDF		100	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		85.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		83.8	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		88.5	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		88.4	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		91.4	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		94.3	(20%-186%)
		37Cl-2,3,7,8-TCDD		80.8	(31%-191%)
12019934	MB for batch 36099	13C-2,3,7,8-TCDD		77.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.3	(23%-140%)
		13C-OCDD		85.6	(17%-157%)
		13C-2,3,7,8-TCDF		77.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		92.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		97.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		83.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		84.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		86.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		86.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		88.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		79.0	(35%-197%)
11537001	VC-IRB-11-ALT-S1	13C-2,3,7,8-TCDD		86.4	(25%-164%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11537001	VC-IRB-11-ALT-S1	13C-1,2,3,7,8-PeCDD		104	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		88.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		92.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		98.4	(23%-140%)
		13C-OCDD		97.0	(17%-157%)
		13C-2,3,7,8-TCDF		85.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		99.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		106	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		89.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		88.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		93.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		92.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		95.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.5	(35%-197%)
11537002	VC-IRB-11-ALT-S2	13C-2,3,7,8-TCDD		88.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		105	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		89.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		91.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		101	(23%-140%)
		13C-OCDD		98.4	(17%-157%)
		13C-2,3,7,8-TCDF		84.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		102	(24%-185%)
		13C-2,3,4,7,8-PeCDF		107	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		88.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		90.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		93.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		96.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		96.0	(26%-138%)
37Cl-2,3,7,8-TCDD		87.0	(35%-197%)		
11537003	VC-IRB-24-S1	13C-2,3,7,8-TCDD		78.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		98.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		88.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		90.1	(23%-140%)
		13C-OCDD		94.6	(17%-157%)
		13C-2,3,7,8-TCDF		77.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		94.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		101	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		79.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		87.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		91.7	(26%-138%)
37Cl-2,3,7,8-TCDD		84.8	(35%-197%)		
11537004	VC-IRB-24-S2	13C-2,3,7,8-TCDD		75.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		92.8	(25%-181%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11537004	VC-IRB-24-S2	13C-1,2,3,4,7,8-HxCDD		75.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		81.7	(23%-140%)
		13C-OCDD		84.2	(17%-157%)
		13C-2,3,7,8-TCDF		72.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		94.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		73.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		81.4	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		81.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		77.2	(35%-197%)
		11537005	VC-IRB-13-ALT-S1	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				102	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				86.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				96.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				98.0	(23%-140%)
13C-OCDD				97.7	(17%-157%)
13C-2,3,7,8-TCDF				85.1	(24%-169%)
13C-1,2,3,7,8-PeCDF				98.3	(24%-185%)
13C-2,3,4,7,8-PeCDF				103	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				87.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				87.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				90.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				94.0	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				91.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				96.2	(26%-138%)
37Cl-2,3,7,8-TCDD		78.9	(35%-197%)		
11537006	VC-IRB-13-ALT-S2	13C-2,3,7,8-TCDD		83.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		100	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		91.5	(23%-140%)
		13C-OCDD		94.0	(17%-157%)
		13C-2,3,7,8-TCDF		82.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		97.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		103	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		87.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		87.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		88.8	(26%-138%)
37Cl-2,3,7,8-TCDD		84.4	(35%-197%)		

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values



**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

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Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
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\* Recovery outside Acceptance Limits  
# Column to be used to flag recovery values  
D Sample Diluted

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1736603  
**Client ID:** LCS for batch 36099  
**Lab Sample ID:** 12019935  
**Instrument:** HRP750  
**Analyst:** MJC

**Sample Type:** Laboratory Control Sample  
**Matrix:** SOIL  
**Analysis Date:** 11/07/2017 15:39  
**Prep Batch ID:** 36099  
**Batch ID:** 36101  
**Dilution:** 1

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	20.0	22.4	112	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	100	104	104	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	100	102	102	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	100	104	104	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	100	100	100	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	100	104	104	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	200	208	104	78-144
51207-31-9	LCS 2,3,7,8-TCDF	20.0	19.6	98.2	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	100	103	103	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	100	105	105	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	100	106	106	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	100	110	110	84-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	100	105	105	70-156
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	100	105	105	78-130
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	100	102	102	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	100	101	101	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	200	206	103	63-170

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** L1736603      **Sample Type:** Laboratory Control Sample Duplicate  
**Client ID:** LCSD for batch 36099      **Matrix:** SOIL  
**Lab Sample ID:** 12019936  
**Instrument:** HRP750      **Analysis Date:** 11/07/2017 16:25      **Dilution:** 1  
**Analyst:** MJC      **Prep Batch ID:** 36099  
**Batch ID:** 36101

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	20.0	21.8	109	67-158	2.57	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	100	107	107	70-142	2.59	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	100	108	108	70-164	5.51	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	100	99.9	99.9	76-134	4.26	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	100	104	104	64-162	2.99	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	100	105	105	70-140	0.852	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	200	208	104	78-144	0.0393	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	20.0	19.7	98.4	75-158	0.204	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	100	103	103	80-134	0.0272	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	100	105	105	68-160	0.416	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	100	106	106	72-134	0.455	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	100	114	114	84-130	3.84	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HxCDF	100	105	105	70-156	0.139	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	100	106	106	78-130	1.68	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	100	102	102	82-122	0.310	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	100	99.9	99.9	78-138	1.01	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	200	208	104	63-170	0.970	0-20

## Method Blank Summary

Page 1 of 1

SDG Number: L1736603  
Client ID: MB for batch 36099  
Lab Sample ID: 12019934  
Column:

Client: ALPH001  
Instrument ID: HRP750  
Prep Date: 04-NOV-17

Matrix: SOIL  
Data File: A06NOV17B\_4-3  
Analyzed: 11/07/17 17:12

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 36099	12019935	A06NOV17B_4-1	11/07/17	1539
02 LCSD for batch 36099	12019936	A06NOV17B_4-2	11/07/17	1625
03 VC-IRB-11-ALT-S1	11537001	A06NOV17B_4-8	11/07/17	2107
04 VC-IRB-11-ALT-S2	11537002	A06NOV17B_4-9	11/07/17	2154
05 VC-IRB-24-S1	11537003	A06NOV17B_4-10	11/07/17	2241
06 VC-IRB-24-S2	11537004	A06NOV17B_4-11	11/07/17	2328
07 VC-IRB-13-ALT-S1	11537005	A06NOV17B_4-12	11/08/17	0015
08 VC-IRB-13-ALT-S2	11537006	A06NOV17B_4-13	11/08/17	0102

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019934		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099		
<b>Client ID:</b> MB for batch 36099		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 17:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD	U	1	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	5	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	5	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	5	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	5	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	5	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	U	10	pg/g	10.0
51207-31-9	2,3,7,8-TCDF	U	1	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	5	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	5	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	5	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	5	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	5	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	5	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	5	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	5	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	10	pg/g	10.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	1	pg/g	1.00
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	5	pg/g	5.00
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	5	pg/g	5.00
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	5	pg/g	5.00
30402-14-3	Total Tetrachlorodibenzofuran	U	1	pg/g	1.00
30402-15-4	Total Pentachlorodibenzofuran	U	5	pg/g	5.00
55684-94-1	Total Hexachlorodibenzofuran	U	5	pg/g	5.00
38998-75-3	Total Heptachlorodibenzofuran	U	5	pg/g	5.00
3333-30-0	TEQ WHO2005 ND=0		0.00	pg/g	
3333-30-1	TEQ WHO2005 ND=0.5		5.70	pg/g	

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		155	200	pg/g	77.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		191	200	pg/g	95.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		171	200	pg/g	85.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		169	200	pg/g	84.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		183	200	pg/g	91.3	(23%-140%)
13C-OCDD		342	400	pg/g	85.6	(17%-157%)
13C-2,3,7,8-TCDF		155	200	pg/g	77.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		184	200	pg/g	92.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		195	200	pg/g	97.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		160	200	pg/g	80.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		166	200	pg/g	83.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		169	200	pg/g	84.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		173	200	pg/g	86.7	(29%-147%)

**Hi-Res Dioxins/Furans  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019934		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099		
<b>Client ID:</b> MB for batch 36099		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 17:12	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			173	200	pg/g	86.6 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			177	200	pg/g	88.3 (26%-138%)
37Cl-2,3,7,8-TCDD			15.8	20.0	pg/g	79.0 (35%-197%)

**Comments:**  
 U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019935		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099		
<b>Client ID:</b> LCS for batch 36099		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 15:39	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-1		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		22.4	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		104	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		102	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		104	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		100	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		104	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		208	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		19.6	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		105	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		106	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		110	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		105	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		102	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		101	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		206	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		158	200	pg/g	79.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		194	200	pg/g	97.1	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		180	200	pg/g	90.2	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		179	200	pg/g	89.6	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		183	200	pg/g	91.5	(22%-166%)
13C-OCDD		346	400	pg/g	86.5	(13%-199%)
13C-2,3,7,8-TCDF		160	200	pg/g	79.8	(22%-152%)
13C-1,2,3,7,8-PeCDF		189	200	pg/g	94.5	(21%-192%)
13C-2,3,4,7,8-PeCDF		193	200	pg/g	96.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		170	200	pg/g	84.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		172	200	pg/g	85.8	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		176	200	pg/g	87.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		179	200	pg/g	89.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		177	200	pg/g	88.7	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		178	200	pg/g	89.2	(20%-186%)
37Cl-2,3,7,8-TCDD		16.3	20.0	pg/g	81.3	(31%-191%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019936		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36099		
<b>Client ID:</b> LCSD for batch 36099		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36101	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 11/07/2017 16:25	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP750
<b>Data File:</b> A06NOV17B_4-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36099	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 04-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
1746-01-6	2,3,7,8-TCDD		21.8	pg/g	1.00
40321-76-4	1,2,3,7,8-PeCDD		107	pg/g	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		108	pg/g	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		99.9	pg/g	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		104	pg/g	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		105	pg/g	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		208	pg/g	10.0
51207-31-9	2,3,7,8-TCDF		19.7	pg/g	1.00
57117-41-6	1,2,3,7,8-PeCDF		103	pg/g	5.00
57117-31-4	2,3,4,7,8-PeCDF		105	pg/g	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		106	pg/g	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		114	pg/g	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		105	pg/g	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		106	pg/g	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		102	pg/g	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		99.9	pg/g	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		208	pg/g	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		160	200	pg/g	80.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		199	200	pg/g	99.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		174	200	pg/g	87.1	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		185	200	pg/g	92.4	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		192	200	pg/g	96.0	(22%-166%)
13C-OCDD		384	400	pg/g	95.9	(13%-199%)
13C-2,3,7,8-TCDF		157	200	pg/g	78.3	(22%-152%)
13C-1,2,3,7,8-PeCDF		190	200	pg/g	95.0	(21%-192%)
13C-2,3,4,7,8-PeCDF		200	200	pg/g	100	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		172	200	pg/g	85.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		168	200	pg/g	83.8	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		177	200	pg/g	88.5	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		177	200	pg/g	88.4	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		183	200	pg/g	91.4	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		189	200	pg/g	94.3	(20%-186%)
37Cl-2,3,7,8-TCDD		16.2	20.0	pg/g	80.8	(31%-191%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.



# **PCB Congeners Analysis**

# Case Narrative

**PCBC Case Narrative**  
**Alpha Analytical Laboratory (ALPH)**  
**SDG L1736603**  
**Work Order 11537**

**Method/Analysis Information**

**Product:** PCB Congeners by EPA Method 1668A in Solids  
**Analytical Method:** EPA Method 1668A  
**Extraction Method:** SW846 3540C  
**Analytical Batch Number:** 36080  
**Clean Up Batch Number:** 36079  
**Extraction Batch Number:** 36078

**Sample Analysis**

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

<b>Sample ID</b>	<b>Client ID</b>
11537001	VC-IRB-11-ALT-S1
11537002	VC-IRB-11-ALT-S2
11537003	VC-IRB-24-S1
11537004	VC-IRB-24-S2
11537005	VC-IRB-13-ALT-S1
11537006	VC-IRB-13-ALT-S2
12019920	Method Blank (MB)
12019921	Laboratory Control Sample (LCS)
12019922	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

**Calibration Information**

**Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

### **Quality Control (QC) Information**

#### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Surrogate Recoveries**

Two surrogates recovered outside the acceptance limits. 11537003 (VC-IRB-24-S1), 12019920 (MB), 12019921 (LCS) and 12019922 (LCSD).

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

#### **LCS/LCSD Relative Percent Difference (RPD) Statement**

Three RPDs were outside the recommended acceptance limits. All individual recoveries met acceptance criteria. LCSD is not required QC for Method 1668A; data is included for informational purposes. 12019921 (LCS) and 12019922 (LCSD).

#### **QC Sample Designation**

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

### **Technical Information**

#### **Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

#### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

#### **Sample Dilutions**

The samples in this SDG did not require dilutions.

**Sample Re-extraction/Re-analysis**

Re-extractions or re-analyses were not required in this SDG.

**Miscellaneous Information****Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

**Manual Integrations**

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

**System Configuration**

This analysis was performed on the following instrument configuration:

<b>Instrument ID</b>	<b>Instrument</b>	<b>System Configuration</b>	<b>Column ID</b>	<b>Column Description</b>
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary

## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Qualifier Definition Report for

ALPH001 Alpha Analytical Laboratory

Client SDG: L1736603 CFA Work Order: 11537

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.
  
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

**Review/Validation**

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 15 NOV 2017

Title: Group Leader

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537001	<b>Date Collected:</b> 10/10/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 19.4
<b>Client ID:</b> VC-IRB-11-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 12:43	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.99	pg/g	1.99
2051-61-8	2-MoCB	U	1.99	pg/g	1.99
2051-62-9	3-MoCB	U	1.99	pg/g	1.99
13029-08-8	4-DiCB	U	1.99	pg/g	1.99
16605-91-7	5-DiCB	U	1.99	pg/g	1.99
25569-80-6	6-DiCB	U	1.99	pg/g	1.99
33284-50-3	7-DiCB	U	1.99	pg/g	1.99
34883-43-7	8-DiCB		2.34	pg/g	1.99
34883-39-1	9-DiCB	U	1.99	pg/g	1.99
33146-45-1	10-DiCB	U	1.99	pg/g	1.99
2050-67-1	11-DiCB	U	19.9	pg/g	19.9
2974-92-7	12-DiCB	CU	3.99	pg/g	3.99
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.99	pg/g	1.99
2050-68-2	15-DiCB		5.82	pg/g	1.99
38444-78-9	16-TrCB	U	1.99	pg/g	1.99
37680-66-3	17-TrCB	U	1.99	pg/g	1.99
37680-65-2	18-TrCB	CU	3.99	pg/g	3.99
38444-73-4	19-TrCB	U	1.99	pg/g	1.99
38444-84-7	20-TrCB	C	8.49	pg/g	3.99
55702-46-0	21-TrCB	CU	3.99	pg/g	3.99
38444-85-8	22-TrCB	U	1.99	pg/g	1.99
55720-44-0	23-TrCB	U	1.99	pg/g	1.99
55702-45-9	24-TrCB	U	1.99	pg/g	1.99
55712-37-3	25-TrCB	U	1.99	pg/g	1.99
38444-81-4	26-TrCB	CU	3.99	pg/g	3.99
38444-76-7	27-TrCB	U	1.99	pg/g	1.99
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		5.17	pg/g	1.99
38444-77-8	32-TrCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.



**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537001	<b>Date Collected:</b> 10/10/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 19.4
<b>Client ID:</b> VC-IRB-11-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 12:43	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.99	pg/g	1.99
37680-69-6	35-TrCB	U	1.99	pg/g	1.99
38444-87-0	36-TrCB	U	1.99	pg/g	1.99
38444-90-5	37-TrCB		4.14	pg/g	1.99
53555-66-1	38-TrCB	U	1.99	pg/g	1.99
38444-88-1	39-TrCB	U	1.99	pg/g	1.99
38444-93-8	40-TeCB	CU	3.99	pg/g	3.99
52663-59-9	41-TeCB	U	1.99	pg/g	1.99
36559-22-5	42-TeCB	U	1.99	pg/g	1.99
70362-46-8	43-TeCB	U	1.99	pg/g	1.99
41464-39-5	44-TeCB	CU	5.98	pg/g	5.98
70362-45-7	45-TeCB	CU	3.99	pg/g	3.99
41464-47-5	46-TeCB	U	1.99	pg/g	1.99
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.99	pg/g	1.99
41464-40-8	49-TeCB	CU	3.99	pg/g	3.99
62796-65-0	50-TeCB	CU	3.99	pg/g	3.99
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		3.44	pg/g	1.99
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.99	pg/g	1.99
74338-24-2	55-TeCB	U	1.99	pg/g	1.99
41464-43-1	56-TeCB		2.41	pg/g	1.99
70424-67-8	57-TeCB	U	1.99	pg/g	1.99
41464-49-7	58-TeCB	U	1.99	pg/g	1.99
74472-33-6	59-TeCB	CU	5.98	pg/g	5.98
33025-41-1	60-TeCB	U	1.99	pg/g	1.99
33284-53-6	61-TeCB	C	8.50	pg/g	7.97
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.99	pg/g	1.99
52663-58-8	64-TeCB	U	1.99	pg/g	1.99

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537001	<b>Date Collected:</b> 10/10/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 19.4
<b>Client ID:</b> VC-IRB-11-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 12:43	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		6.65	pg/g	1.99
73575-53-8	67-TeCB	U	1.99	pg/g	1.99
73575-52-7	68-TeCB	U	1.99	pg/g	1.99
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.99	pg/g	1.99
74338-23-1	73-TeCB	U	1.99	pg/g	1.99
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.99	pg/g	1.99
70362-49-1	78-TeCB	U	1.99	pg/g	1.99
41464-48-6	79-TeCB	U	1.99	pg/g	1.99
33284-52-5	80-TeCB	U	1.99	pg/g	1.99
70362-50-4	81-TeCB	U	1.99	pg/g	1.99
52663-62-4	82-PeCB	U	1.99	pg/g	1.99
60145-20-2	83-PeCB	U	1.99	pg/g	1.99
52663-60-2	84-PeCB	U	1.99	pg/g	1.99
65510-45-4	85-PeCB	CU	5.98	pg/g	5.98
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.99	pg/g	3.99
73575-57-2	89-PeCB	U	1.99	pg/g	1.99
68194-07-0	90-PeCB	CU	5.98	pg/g	5.98
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.99	pg/g	1.99
73575-56-1	93-PeCB	CU	3.99	pg/g	3.99
73575-55-0	94-PeCB	U	1.99	pg/g	1.99
38379-99-6	95-PeCB		2.12	pg/g	1.99
73575-54-9	96-PeCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537001  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-11-ALT-S1  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 12:43  
**Data File:** c10nov17a-4  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 15:40  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.45 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 19.4  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.99	pg/g	3.99
38380-01-7	99-PeCB		3.99	pg/g	1.99
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.99	pg/g	1.99
56558-16-8	104-PeCB	U	1.99	pg/g	1.99
32598-14-4	105-PeCB		2.12	pg/g	1.99
70424-69-0	106-PeCB	U	1.99	pg/g	1.99
70424-68-9	107-PeCB	U	1.99	pg/g	1.99
70362-41-3	108-PeCB	CU	3.99	pg/g	3.99
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	C	4.42	pg/g	3.99
39635-32-0	111-PeCB	U	1.99	pg/g	1.99
74472-36-9	112-PeCB	U	1.99	pg/g	1.99
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.99	pg/g	1.99
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		6.90	pg/g	1.99
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.99	pg/g	1.99
56558-18-0	121-PeCB	U	1.99	pg/g	1.99
76842-07-4	122-PeCB	U	1.99	pg/g	1.99
65510-44-3	123-PeCB	U	1.99	pg/g	1.99
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.99	pg/g	1.99
39635-33-1	127-PeCB	U	1.99	pg/g	1.99
38380-07-3	128-HxCB	CU	3.99	pg/g	3.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537001	<b>Date Collected:</b> 10/10/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 19.4
<b>Client ID:</b> VC-IRB-11-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 12:43	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	C	8.02	pg/g	5.98
52663-66-8	130-HxCB	U	1.99	pg/g	1.99
61798-70-7	131-HxCB	U	1.99	pg/g	1.99
38380-05-1	132-HxCB	U	1.99	pg/g	1.99
35694-04-3	133-HxCB	U	1.99	pg/g	1.99
52704-70-8	134-HxCB	U	1.99	pg/g	1.99
52744-13-5	135-HxCB	CU	3.99	pg/g	3.99
38411-22-2	136-HxCB	U	1.99	pg/g	1.99
35694-06-5	137-HxCB	U	1.99	pg/g	1.99
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.99	pg/g	3.99
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.99	pg/g	1.99
41411-61-4	142-HxCB	U	1.99	pg/g	1.99
68194-15-0	143-HxCB	U	1.99	pg/g	1.99
68194-14-9	144-HxCB	U	1.99	pg/g	1.99
74472-40-5	145-HxCB	U	1.99	pg/g	1.99
51908-16-8	146-HxCB		2.16	pg/g	1.99
68194-13-8	147-HxCB	C	4.93	pg/g	3.99
74472-41-6	148-HxCB	U	1.99	pg/g	1.99
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.99	pg/g	1.99
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.99	pg/g	1.99
35065-27-1	153-HxCB	C	9.06	pg/g	3.99
60145-22-4	154-HxCB	U	1.99	pg/g	1.99
33979-03-2	155-HxCB	U	1.99	pg/g	1.99
38380-08-4	156-HxCB	CU	3.99	pg/g	3.99
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.99	pg/g	1.99
39635-35-3	159-HxCB	U	1.99	pg/g	1.99
41411-62-5	160-HxCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537001  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-11-ALT-S1  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 12:43  
**Data File:** c10nov17a-4  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 15:40  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 12.45 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 19.4  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.99	pg/g	1.99
39635-34-2	162-HxCB	U	1.99	pg/g	1.99
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.99	pg/g	1.99
74472-46-1	165-HxCB	U	1.99	pg/g	1.99
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.99	pg/g	1.99
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.99	pg/g	1.99
35065-30-6	170-HpCB	U	1.99	pg/g	1.99
52663-71-5	171-HpCB	CU	3.99	pg/g	3.99
52663-74-8	172-HpCB	U	1.99	pg/g	1.99
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.99	pg/g	1.99
40186-70-7	175-HpCB	U	1.99	pg/g	1.99
52663-65-7	176-HpCB	U	1.99	pg/g	1.99
52663-70-4	177-HpCB	U	1.99	pg/g	1.99
52663-67-9	178-HpCB	U	1.99	pg/g	1.99
52663-64-6	179-HpCB	U	1.99	pg/g	1.99
35065-29-3	180-HpCB	CU	3.99	pg/g	3.99
74472-47-2	181-HpCB	U	1.99	pg/g	1.99
60145-23-5	182-HpCB	U	1.99	pg/g	1.99
52663-69-1	183-HpCB	CU	3.99	pg/g	3.99
74472-48-3	184-HpCB	U	1.99	pg/g	1.99
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.99	pg/g	1.99
52663-68-0	187-HpCB		5.07	pg/g	1.99
74487-85-7	188-HpCB	U	1.99	pg/g	1.99
39635-31-9	189-HpCB	U	1.99	pg/g	1.99
41411-64-7	190-HpCB	U	1.99	pg/g	1.99
74472-50-7	191-HpCB	U	1.99	pg/g	1.99
74472-51-8	192-HpCB	U	1.99	pg/g	1.99

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537001	<b>Date Collected:</b> 10/10/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 19.4
<b>Client ID:</b> VC-IRB-11-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 12:43	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.45 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.99	pg/g	1.99
52663-78-2	195-OcCB	U	1.99	pg/g	1.99
42740-50-1	196-OcCB	U	1.99	pg/g	1.99
33091-17-7	197-OcCB	CU	3.99	pg/g	3.99
68194-17-2	198-OcCB	CU	3.99	pg/g	3.99
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.99	pg/g	1.99
2136-99-4	202-OcCB	U	1.99	pg/g	1.99
52663-76-0	203-OcCB	U	1.99	pg/g	1.99
74472-52-9	204-OcCB	U	1.99	pg/g	1.99
74472-53-0	205-OcCB	U	1.99	pg/g	1.99
40186-72-9	206-NoCB		3.46	pg/g	1.99
52663-79-3	207-NoCB	U	1.99	pg/g	1.99
52663-77-1	208-NoCB		2.85	pg/g	1.99
2051-24-3	209-DeCB		5.91	pg/g	1.99
1336-36-3	Total PCB Congeners		108	pg/g	1.99

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		85.0	199	pg/g	42.7	(15%-150%)
13C-3-MoCB		102	199	pg/g	51.1	(15%-150%)
13C-4-DiCB		111	199	pg/g	55.7	(25%-150%)
13C-15-DiCB		188	199	pg/g	94.3	(25%-150%)
13C-19-TrCB		157	199	pg/g	78.9	(25%-150%)
13C-37-TrCB		151	199	pg/g	75.5	(25%-150%)
13C-54-TeCB		143	199	pg/g	71.9	(25%-150%)
13C-77-TeCB		166	199	pg/g	83.2	(25%-150%)
13C-81-TeCB		168	199	pg/g	84.1	(25%-150%)
13C-104-PeCB		176	199	pg/g	88.2	(25%-150%)
13C-105-PeCB		149	199	pg/g	74.9	(25%-150%)
13C-114-PeCB		151	199	pg/g	75.7	(25%-150%)
13C-118-PeCB		151	199	pg/g	75.9	(25%-150%)
13C-123-PeCB		158	199	pg/g	79.1	(25%-150%)
13C-126-PeCB		143	199	pg/g	71.5	(25%-150%)
13C-155-HxCB		163	199	pg/g	81.8	(25%-150%)
13C-156-HxCB	C	272	399	pg/g	68.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		143	199	pg/g	71.5	(25%-150%)
13C-169-HxCB		125	199	pg/g	62.5	(25%-150%)
13C-188-HpCB		199	199	pg/g	100	(25%-150%)
13C-189-HpCB		137	199	pg/g	68.8	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537001	<b>Date Collected:</b> 10/10/2017 15:40	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 19.4
<b>Client ID:</b> VC-IRB-11-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 12:43	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.45 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			194	199	pg/g	97.1 (25%-150%)
13C-205-OcCB			168	199	pg/g	84.3 (25%-150%)
13C-206-NoCB			196	199	pg/g	98.3 (25%-150%)
13C-208-NoCB			194	199	pg/g	97.3 (25%-150%)
13C-209-DeCB			214	199	pg/g	107 (25%-150%)
13C-111-PeCB			163	199	pg/g	81.8 (30%-135%)
13C-28-TrCB			137	199	pg/g	68.6 (30%-135%)
13C-178-HpCB			197	199	pg/g	99.0 (30%-135%)

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 13:50	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2.76	pg/g	2.76
2051-61-8	2-MoCB		3.58	pg/g	2.76
2051-62-9	3-MoCB		3.69	pg/g	2.76
13029-08-8	4-DiCB	U	2.76	pg/g	2.76
16605-91-7	5-DiCB	U	2.76	pg/g	2.76
25569-80-6	6-DiCB	U	2.76	pg/g	2.76
33284-50-3	7-DiCB	U	2.76	pg/g	2.76
34883-43-7	8-DiCB	U	2.76	pg/g	2.76
34883-39-1	9-DiCB	U	2.76	pg/g	2.76
33146-45-1	10-DiCB	U	2.76	pg/g	2.76
2050-67-1	11-DiCB	U	27.6	pg/g	27.6
2974-92-7	12-DiCB	CU	5.52	pg/g	5.52
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2.76	pg/g	2.76
2050-68-2	15-DiCB	U	2.76	pg/g	2.76
38444-78-9	16-TrCB	U	2.76	pg/g	2.76
37680-66-3	17-TrCB	U	2.76	pg/g	2.76
37680-65-2	18-TrCB	CU	5.52	pg/g	5.52
38444-73-4	19-TrCB	U	2.76	pg/g	2.76
38444-84-7	20-TrCB	CU	5.52	pg/g	5.52
55702-46-0	21-TrCB	CU	5.52	pg/g	5.52
38444-85-8	22-TrCB	U	2.76	pg/g	2.76
55720-44-0	23-TrCB	U	2.76	pg/g	2.76
55702-45-9	24-TrCB	U	2.76	pg/g	2.76
55712-37-3	25-TrCB	U	2.76	pg/g	2.76
38444-81-4	26-TrCB	CU	5.52	pg/g	5.52
38444-76-7	27-TrCB	U	2.76	pg/g	2.76
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2.76	pg/g	2.76
38444-77-8	32-TrCB	U	2.76	pg/g	2.76

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.



**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 13:50	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2.76	pg/g	2.76
37680-69-6	35-TrCB	U	2.76	pg/g	2.76
38444-87-0	36-TrCB	U	2.76	pg/g	2.76
38444-90-5	37-TrCB	U	2.76	pg/g	2.76
53555-66-1	38-TrCB	U	2.76	pg/g	2.76
38444-88-1	39-TrCB	U	2.76	pg/g	2.76
38444-93-8	40-TeCB	CU	5.52	pg/g	5.52
52663-59-9	41-TeCB	U	2.76	pg/g	2.76
36559-22-5	42-TeCB	U	2.76	pg/g	2.76
70362-46-8	43-TeCB	U	2.76	pg/g	2.76
41464-39-5	44-TeCB	CU	8.29	pg/g	8.29
70362-45-7	45-TeCB	CU	5.52	pg/g	5.52
41464-47-5	46-TeCB	U	2.76	pg/g	2.76
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2.76	pg/g	2.76
41464-40-8	49-TeCB	CU	5.52	pg/g	5.52
62796-65-0	50-TeCB	CU	5.52	pg/g	5.52
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2.76	pg/g	2.76
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2.76	pg/g	2.76
74338-24-2	55-TeCB	U	2.76	pg/g	2.76
41464-43-1	56-TeCB	U	2.76	pg/g	2.76
70424-67-8	57-TeCB	U	2.76	pg/g	2.76
41464-49-7	58-TeCB	U	2.76	pg/g	2.76
74472-33-6	59-TeCB	CU	8.29	pg/g	8.29
33025-41-1	60-TeCB	U	2.76	pg/g	2.76
33284-53-6	61-TeCB	CU	11	pg/g	11.0
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2.76	pg/g	2.76
52663-58-8	64-TeCB	U	2.76	pg/g	2.76

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 13:50	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2.76	pg/g	2.76
73575-53-8	67-TeCB	U	2.76	pg/g	2.76
73575-52-7	68-TeCB	U	2.76	pg/g	2.76
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2.76	pg/g	2.76
74338-23-1	73-TeCB	U	2.76	pg/g	2.76
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2.76	pg/g	2.76
70362-49-1	78-TeCB	U	2.76	pg/g	2.76
41464-48-6	79-TeCB	U	2.76	pg/g	2.76
33284-52-5	80-TeCB	U	2.76	pg/g	2.76
70362-50-4	81-TeCB	U	2.76	pg/g	2.76
52663-62-4	82-PeCB	U	2.76	pg/g	2.76
60145-20-2	83-PeCB	U	2.76	pg/g	2.76
52663-60-2	84-PeCB	U	2.76	pg/g	2.76
65510-45-4	85-PeCB	CU	8.29	pg/g	8.29
55312-69-1	86-PeCB	CU	16.6	pg/g	16.6
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	5.52	pg/g	5.52
73575-57-2	89-PeCB	U	2.76	pg/g	2.76
68194-07-0	90-PeCB	CU	8.29	pg/g	8.29
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2.76	pg/g	2.76
73575-56-1	93-PeCB	CU	5.52	pg/g	5.52
73575-55-0	94-PeCB	U	2.76	pg/g	2.76
38379-99-6	95-PeCB	U	2.76	pg/g	2.76
73575-54-9	96-PeCB	U	2.76	pg/g	2.76

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 13:50	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	5.52	pg/g	5.52
38380-01-7	99-PeCB	U	2.76	pg/g	2.76
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2.76	pg/g	2.76
56558-16-8	104-PeCB	U	2.76	pg/g	2.76
32598-14-4	105-PeCB	U	2.76	pg/g	2.76
70424-69-0	106-PeCB	U	2.76	pg/g	2.76
70424-68-9	107-PeCB	U	2.76	pg/g	2.76
70362-41-3	108-PeCB	CU	5.52	pg/g	5.52
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	5.52	pg/g	5.52
39635-32-0	111-PeCB	U	2.76	pg/g	2.76
74472-36-9	112-PeCB	U	2.76	pg/g	2.76
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2.76	pg/g	2.76
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2.76	pg/g	2.76
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2.76	pg/g	2.76
56558-18-0	121-PeCB	U	2.76	pg/g	2.76
76842-07-4	122-PeCB	U	2.76	pg/g	2.76
65510-44-3	123-PeCB	U	2.76	pg/g	2.76
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2.76	pg/g	2.76
39635-33-1	127-PeCB	U	2.76	pg/g	2.76
38380-07-3	128-HxCB	CU	5.52	pg/g	5.52

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 13:50	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	8.29	pg/g	8.29
52663-66-8	130-HxCB	U	2.76	pg/g	2.76
61798-70-7	131-HxCB	U	2.76	pg/g	2.76
38380-05-1	132-HxCB	U	2.76	pg/g	2.76
35694-04-3	133-HxCB	U	2.76	pg/g	2.76
52704-70-8	134-HxCB	U	2.76	pg/g	2.76
52744-13-5	135-HxCB	CU	5.52	pg/g	5.52
38411-22-2	136-HxCB	U	2.76	pg/g	2.76
35694-06-5	137-HxCB	U	2.76	pg/g	2.76
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	5.52	pg/g	5.52
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2.76	pg/g	2.76
41411-61-4	142-HxCB	U	2.76	pg/g	2.76
68194-15-0	143-HxCB	U	2.76	pg/g	2.76
68194-14-9	144-HxCB	U	2.76	pg/g	2.76
74472-40-5	145-HxCB	U	2.76	pg/g	2.76
51908-16-8	146-HxCB	U	2.76	pg/g	2.76
68194-13-8	147-HxCB	CU	5.52	pg/g	5.52
74472-41-6	148-HxCB	U	2.76	pg/g	2.76
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2.76	pg/g	2.76
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2.76	pg/g	2.76
35065-27-1	153-HxCB	CU	5.52	pg/g	5.52
60145-22-4	154-HxCB	U	2.76	pg/g	2.76
33979-03-2	155-HxCB	U	2.76	pg/g	2.76
38380-08-4	156-HxCB	CU	5.52	pg/g	5.52
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2.76	pg/g	2.76
39635-35-3	159-HxCB	U	2.76	pg/g	2.76
41411-62-5	160-HxCB	U	2.76	pg/g	2.76

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 13:50	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2.76	pg/g	2.76
39635-34-2	162-HxCB	U	2.76	pg/g	2.76
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2.76	pg/g	2.76
74472-46-1	165-HxCB	U	2.76	pg/g	2.76
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2.76	pg/g	2.76
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2.76	pg/g	2.76
35065-30-6	170-HpCB	U	2.76	pg/g	2.76
52663-71-5	171-HpCB	CU	5.52	pg/g	5.52
52663-74-8	172-HpCB	U	2.76	pg/g	2.76
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2.76	pg/g	2.76
40186-70-7	175-HpCB	U	2.76	pg/g	2.76
52663-65-7	176-HpCB	U	2.76	pg/g	2.76
52663-70-4	177-HpCB	U	2.76	pg/g	2.76
52663-67-9	178-HpCB	U	2.76	pg/g	2.76
52663-64-6	179-HpCB	U	2.76	pg/g	2.76
35065-29-3	180-HpCB	CU	5.52	pg/g	5.52
74472-47-2	181-HpCB	U	2.76	pg/g	2.76
60145-23-5	182-HpCB	U	2.76	pg/g	2.76
52663-69-1	183-HpCB	CU	5.52	pg/g	5.52
74472-48-3	184-HpCB	U	2.76	pg/g	2.76
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2.76	pg/g	2.76
52663-68-0	187-HpCB	U	2.76	pg/g	2.76
74487-85-7	188-HpCB	U	2.76	pg/g	2.76
39635-31-9	189-HpCB	U	2.76	pg/g	2.76
41411-64-7	190-HpCB	U	2.76	pg/g	2.76
74472-50-7	191-HpCB	U	2.76	pg/g	2.76
74472-51-8	192-HpCB	U	2.76	pg/g	2.76

**Comments:**

- B** The target analyte was detected in the associated blank.  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/10/2017 13:50	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c10nov17a-5		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2.76	pg/g	2.76
52663-78-2	195-OcCB	U	2.76	pg/g	2.76
42740-50-1	196-OcCB	U	2.76	pg/g	2.76
33091-17-7	197-OcCB	CU	5.52	pg/g	5.52
68194-17-2	198-OcCB	CU	5.52	pg/g	5.52
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2.76	pg/g	2.76
2136-99-4	202-OcCB	U	2.76	pg/g	2.76
52663-76-0	203-OcCB	U	2.76	pg/g	2.76
74472-52-9	204-OcCB	U	2.76	pg/g	2.76
74472-53-0	205-OcCB	U	2.76	pg/g	2.76
40186-72-9	206-NoCB	U	2.76	pg/g	2.76
52663-79-3	207-NoCB	U	2.76	pg/g	2.76
52663-77-1	208-NoCB	U	2.76	pg/g	2.76
2051-24-3	209-DeCB	U	2.76	pg/g	2.76
1336-36-3	Total PCB Congeners	B	7.28	pg/g	2.76

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		65.7	276	pg/g	23.8	(15%-150%)
13C-3-MoCB		78.2	276	pg/g	28.3	(15%-150%)
13C-4-DiCB		84.4	276	pg/g	30.5	(25%-150%)
13C-15-DiCB		119	276	pg/g	43.0	(25%-150%)
13C-19-TrCB		102	276	pg/g	37.1	(25%-150%)
13C-37-TrCB		105	276	pg/g	38.0	(25%-150%)
13C-54-TeCB		105	276	pg/g	37.9	(25%-150%)
13C-77-TeCB		122	276	pg/g	44.2	(25%-150%)
13C-81-TeCB		120	276	pg/g	43.3	(25%-150%)
13C-104-PeCB		130	276	pg/g	47.1	(25%-150%)
13C-105-PeCB		115	276	pg/g	41.7	(25%-150%)
13C-114-PeCB		116	276	pg/g	41.8	(25%-150%)
13C-118-PeCB		117	276	pg/g	42.5	(25%-150%)
13C-123-PeCB		120	276	pg/g	43.4	(25%-150%)
13C-126-PeCB		116	276	pg/g	42.0	(25%-150%)
13C-155-HxCB		116	276	pg/g	42.0	(25%-150%)
13C-156-HxCB	C	215	552	pg/g	39.0	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		111	276	pg/g	40.3	(25%-150%)
13C-169-HxCB		101	276	pg/g	36.7	(25%-150%)
13C-188-HpCB		149	276	pg/g	53.8	(25%-150%)
13C-189-HpCB		114	276	pg/g	41.4	(25%-150%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537002	<b>Date Collected:</b> 10/10/2017 15:50	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 52
<b>Client ID:</b> VC-IRB-11-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 13:50	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.07 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			155	276	pg/g	56.0 (25%-150%)
13C-205-OcCB			139	276	pg/g	50.1 (25%-150%)
13C-206-NoCB			170	276	pg/g	61.6 (25%-150%)
13C-208-NoCB			164	276	pg/g	59.3 (25%-150%)
13C-209-DeCB			195	276	pg/g	70.5 (25%-150%)
13C-111-PeCB			237	276	pg/g	85.9 (30%-135%)
13C-28-TrCB			204	276	pg/g	73.8 (30%-135%)
13C-178-HpCB			292	276	pg/g	106 (30%-135%)

**Comments:**

- B** The target analyte was detected in the associated blank.
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537003  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S1  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 14:56  
**Data File:** c10nov17a-6  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:45  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 45.3  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:**  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2.43	pg/g	2.43
2051-61-8	2-MoCB		5.62	pg/g	2.43
2051-62-9	3-MoCB	U	2.43	pg/g	2.43
13029-08-8	4-DiCB	U	2.43	pg/g	2.43
16605-91-7	5-DiCB	U	2.43	pg/g	2.43
25569-80-6	6-DiCB	U	2.43	pg/g	2.43
33284-50-3	7-DiCB	U	2.43	pg/g	2.43
34883-43-7	8-DiCB	U	2.43	pg/g	2.43
34883-39-1	9-DiCB	U	2.43	pg/g	2.43
33146-45-1	10-DiCB	U	2.43	pg/g	2.43
2050-67-1	11-DiCB	U	24.3	pg/g	24.3
2974-92-7	12-DiCB	CU	4.86	pg/g	4.86
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2.43	pg/g	2.43
2050-68-2	15-DiCB	U	2.43	pg/g	2.43
38444-78-9	16-TrCB	U	2.43	pg/g	2.43
37680-66-3	17-TrCB		2.50	pg/g	2.43
37680-65-2	18-TrCB	CU	4.86	pg/g	4.86
38444-73-4	19-TrCB	U	2.43	pg/g	2.43
38444-84-7	20-TrCB	C	12.5	pg/g	4.86
55702-46-0	21-TrCB	CU	4.86	pg/g	4.86
38444-85-8	22-TrCB		2.67	pg/g	2.43
55720-44-0	23-TrCB	U	2.43	pg/g	2.43
55702-45-9	24-TrCB	U	2.43	pg/g	2.43
55712-37-3	25-TrCB	U	2.43	pg/g	2.43
38444-81-4	26-TrCB	CU	4.86	pg/g	4.86
38444-76-7	27-TrCB	U	2.43	pg/g	2.43
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB		7.61	pg/g	2.43
38444-77-8	32-TrCB	U	2.43	pg/g	2.43

**Comments:**

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**U** Analyte was analyzed for, but not detected above the specified detection limit.



**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537003  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S1  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 14:56  
**Data File:** c10nov17a-6  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:45  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 45.3  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2.43	pg/g	2.43
37680-69-6	35-TrCB	U	2.43	pg/g	2.43
38444-87-0	36-TrCB	U	2.43	pg/g	2.43
38444-90-5	37-TrCB		4.61	pg/g	2.43
53555-66-1	38-TrCB	U	2.43	pg/g	2.43
38444-88-1	39-TrCB	U	2.43	pg/g	2.43
38444-93-8	40-TeCB	CU	4.86	pg/g	4.86
52663-59-9	41-TeCB	U	2.43	pg/g	2.43
36559-22-5	42-TeCB	U	2.43	pg/g	2.43
70362-46-8	43-TeCB	U	2.43	pg/g	2.43
41464-39-5	44-TeCB	C	7.50	pg/g	7.29
70362-45-7	45-TeCB	CU	4.86	pg/g	4.86
41464-47-5	46-TeCB	U	2.43	pg/g	2.43
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2.43	pg/g	2.43
41464-40-8	49-TeCB	C	5.86	pg/g	4.86
62796-65-0	50-TeCB	CU	4.86	pg/g	4.86
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB		6.76	pg/g	2.43
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2.43	pg/g	2.43
74338-24-2	55-TeCB	U	2.43	pg/g	2.43
41464-43-1	56-TeCB		3.39	pg/g	2.43
70424-67-8	57-TeCB	U	2.43	pg/g	2.43
41464-49-7	58-TeCB	U	2.43	pg/g	2.43
74472-33-6	59-TeCB	CU	7.29	pg/g	7.29
33025-41-1	60-TeCB	U	2.43	pg/g	2.43
33284-53-6	61-TeCB	C	11.9	pg/g	9.72
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2.43	pg/g	2.43
52663-58-8	64-TeCB	U	2.43	pg/g	2.43

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537003	<b>Date Collected:</b> 10/10/2017 14:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 45.3
<b>Client ID:</b> VC-IRB-24-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 14:56	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.05 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB		9.29	pg/g	2.43
73575-53-8	67-TeCB	U	2.43	pg/g	2.43
73575-52-7	68-TeCB	U	2.43	pg/g	2.43
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2.43	pg/g	2.43
74338-23-1	73-TeCB	U	2.43	pg/g	2.43
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2.43	pg/g	2.43
70362-49-1	78-TeCB	U	2.43	pg/g	2.43
41464-48-6	79-TeCB	U	2.43	pg/g	2.43
33284-52-5	80-TeCB	U	2.43	pg/g	2.43
70362-50-4	81-TeCB	U	2.43	pg/g	2.43
52663-62-4	82-PeCB	U	2.43	pg/g	2.43
60145-20-2	83-PeCB	U	2.43	pg/g	2.43
52663-60-2	84-PeCB	U	2.43	pg/g	2.43
65510-45-4	85-PeCB	CU	7.29	pg/g	7.29
55312-69-1	86-PeCB	CU	14.6	pg/g	14.6
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4.86	pg/g	4.86
73575-57-2	89-PeCB	U	2.43	pg/g	2.43
68194-07-0	90-PeCB	C	7.34	pg/g	7.29
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2.43	pg/g	2.43
73575-56-1	93-PeCB	CU	4.86	pg/g	4.86
73575-55-0	94-PeCB	U	2.43	pg/g	2.43
38379-99-6	95-PeCB		4.47	pg/g	2.43
73575-54-9	96-PeCB	U	2.43	pg/g	2.43

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537003  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S1  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 14:56  
**Data File:** c10nov17a-6  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:45  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 45.3  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4.86	pg/g	4.86
38380-01-7	99-PeCB		7.61	pg/g	2.43
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2.43	pg/g	2.43
56558-16-8	104-PeCB	U	2.43	pg/g	2.43
32598-14-4	105-PeCB		3.11	pg/g	2.43
70424-69-0	106-PeCB	U	2.43	pg/g	2.43
70424-68-9	107-PeCB	U	2.43	pg/g	2.43
70362-41-3	108-PeCB	CU	4.86	pg/g	4.86
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	C	7.09	pg/g	4.86
39635-32-0	111-PeCB	U	2.43	pg/g	2.43
74472-36-9	112-PeCB	U	2.43	pg/g	2.43
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2.43	pg/g	2.43
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB		11.5	pg/g	2.43
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2.43	pg/g	2.43
56558-18-0	121-PeCB	U	2.43	pg/g	2.43
76842-07-4	122-PeCB	U	2.43	pg/g	2.43
65510-44-3	123-PeCB	U	2.43	pg/g	2.43
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2.43	pg/g	2.43
39635-33-1	127-PeCB	U	2.43	pg/g	2.43
38380-07-3	128-HxCB	CU	4.86	pg/g	4.86

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537003  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S1  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 14:56  
**Data File:** c10nov17a-6  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:45  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 45.3  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	C	14.6	pg/g	7.29
52663-66-8	130-HxCB	U	2.43	pg/g	2.43
61798-70-7	131-HxCB	U	2.43	pg/g	2.43
38380-05-1	132-HxCB	U	2.43	pg/g	2.43
35694-04-3	133-HxCB	U	2.43	pg/g	2.43
52704-70-8	134-HxCB	U	2.43	pg/g	2.43
52744-13-5	135-HxCB	CU	4.86	pg/g	4.86
38411-22-2	136-HxCB	U	2.43	pg/g	2.43
35694-06-5	137-HxCB	U	2.43	pg/g	2.43
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4.86	pg/g	4.86
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2.43	pg/g	2.43
41411-61-4	142-HxCB	U	2.43	pg/g	2.43
68194-15-0	143-HxCB	U	2.43	pg/g	2.43
68194-14-9	144-HxCB	U	2.43	pg/g	2.43
74472-40-5	145-HxCB	U	2.43	pg/g	2.43
51908-16-8	146-HxCB		3.46	pg/g	2.43
68194-13-8	147-HxCB	C	9.89	pg/g	4.86
74472-41-6	148-HxCB	U	2.43	pg/g	2.43
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2.43	pg/g	2.43
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2.43	pg/g	2.43
35065-27-1	153-HxCB	C	16.4	pg/g	4.86
60145-22-4	154-HxCB	U	2.43	pg/g	2.43
33979-03-2	155-HxCB	U	2.43	pg/g	2.43
38380-08-4	156-HxCB	CU	4.86	pg/g	4.86
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2.43	pg/g	2.43
39635-35-3	159-HxCB	U	2.43	pg/g	2.43
41411-62-5	160-HxCB	U	2.43	pg/g	2.43

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537003  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S1  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 14:56  
**Data File:** c10nov17a-6  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:45  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.05 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 45.3  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2.43	pg/g	2.43
39635-34-2	162-HxCB	U	2.43	pg/g	2.43
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2.43	pg/g	2.43
74472-46-1	165-HxCB	U	2.43	pg/g	2.43
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2.43	pg/g	2.43
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2.43	pg/g	2.43
35065-30-6	170-HpCB		2.50	pg/g	2.43
52663-71-5	171-HpCB	CU	4.86	pg/g	4.86
52663-74-8	172-HpCB	U	2.43	pg/g	2.43
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2.43	pg/g	2.43
40186-70-7	175-HpCB	U	2.43	pg/g	2.43
52663-65-7	176-HpCB	U	2.43	pg/g	2.43
52663-70-4	177-HpCB		3.06	pg/g	2.43
52663-67-9	178-HpCB	U	2.43	pg/g	2.43
52663-64-6	179-HpCB	U	2.43	pg/g	2.43
35065-29-3	180-HpCB	C	6.03	pg/g	4.86
74472-47-2	181-HpCB	U	2.43	pg/g	2.43
60145-23-5	182-HpCB	U	2.43	pg/g	2.43
52663-69-1	183-HpCB	CU	4.86	pg/g	4.86
74472-48-3	184-HpCB	U	2.43	pg/g	2.43
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2.43	pg/g	2.43
52663-68-0	187-HpCB		8.99	pg/g	2.43
74487-85-7	188-HpCB	U	2.43	pg/g	2.43
39635-31-9	189-HpCB	U	2.43	pg/g	2.43
41411-64-7	190-HpCB	U	2.43	pg/g	2.43
74472-50-7	191-HpCB	U	2.43	pg/g	2.43
74472-51-8	192-HpCB	U	2.43	pg/g	2.43

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537003	<b>Date Collected:</b> 10/10/2017 14:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 45.3
<b>Client ID:</b> VC-IRB-24-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 14:56	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.05 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2.43	pg/g	2.43
52663-78-2	195-OcCB	U	2.43	pg/g	2.43
42740-50-1	196-OcCB	U	2.43	pg/g	2.43
33091-17-7	197-OcCB	CU	4.86	pg/g	4.86
68194-17-2	198-OcCB	C	4.87	pg/g	4.86
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2.43	pg/g	2.43
2136-99-4	202-OcCB		3.07	pg/g	2.43
52663-76-0	203-OcCB	U	2.43	pg/g	2.43
74472-52-9	204-OcCB	U	2.43	pg/g	2.43
74472-53-0	205-OcCB	U	2.43	pg/g	2.43
40186-72-9	206-NoCB		6.10	pg/g	2.43
52663-79-3	207-NoCB	U	2.43	pg/g	2.43
52663-77-1	208-NoCB		5.18	pg/g	2.43
2051-24-3	209-DeCB		8.09	pg/g	2.43
1336-36-3	Total PCB Congeners		214	pg/g	2.43

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		52.1	243	pg/g	21.5	(15%-150%)
13C-3-MoCB		56.2	243	pg/g	23.1	(15%-150%)
13C-4-DiCB		63.2	243	pg/g	26.0	(25%-150%)
13C-15-DiCB		72.9	243	pg/g	30.0	(25%-150%)
13C-19-TrCB		74.4	243	pg/g	30.6	(25%-150%)
13C-37-TrCB		65.9	243	pg/g	27.1	(25%-150%)
13C-54-TeCB		75.6	243	pg/g	31.1	(25%-150%)
13C-77-TeCB		71.6	243	pg/g	29.5	(25%-150%)
13C-81-TeCB		69.3	243	pg/g	28.5	(25%-150%)
13C-104-PeCB		89.8	243	pg/g	36.9	(25%-150%)
13C-105-PeCB		72.8	243	pg/g	30.0	(25%-150%)
13C-114-PeCB		73.0	243	pg/g	30.1	(25%-150%)
13C-118-PeCB		74.4	243	pg/g	30.6	(25%-150%)
13C-123-PeCB		76.1	243	pg/g	31.3	(25%-150%)
13C-126-PeCB		67.2	243	pg/g	27.7	(25%-150%)
13C-155-HxCB		76.7	243	pg/g	31.6	(25%-150%)
13C-156-HxCB	C	130	486	pg/g	26.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		67.2	243	pg/g	27.7	(25%-150%)
13C-169-HxCB		56.2	243	pg/g	23.1	* (25%-150%)
13C-188-HpCB		107	243	pg/g	44.1	(25%-150%)
13C-189-HpCB		68.6	243	pg/g	28.2	(25%-150%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537003	<b>Date Collected:</b> 10/10/2017 14:45	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 45.3
<b>Client ID:</b> VC-IRB-24-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 14:56	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.05 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			103	243	pg/g	42.5 (25%-150%)
13C-205-OcCB			82.5	243	pg/g	34.0 (25%-150%)
13C-206-NoCB			98.5	243	pg/g	40.6 (25%-150%)
13C-208-NoCB			104	243	pg/g	42.7 (25%-150%)
13C-209-DeCB			87.2	243	pg/g	35.9 (25%-150%)
13C-111-PeCB			104	243	pg/g	43.0 (30%-135%)
13C-28-TrCB			96.4	243	pg/g	39.7 (30%-135%)
13C-178-HpCB			129	243	pg/g	53.3 (30%-135%)

**Comments:**  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

Page 1 of 8

**SDG Number:** L1736603  
**Lab Sample ID:** 11537004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S2  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 16:03  
**Data File:** c10nov17a-7  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:55  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.09 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 64.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	3.69	pg/g	3.69
2051-61-8	2-MoCB	U	3.69	pg/g	3.69
2051-62-9	3-MoCB	U	3.69	pg/g	3.69
13029-08-8	4-DiCB	U	3.69	pg/g	3.69
16605-91-7	5-DiCB	U	3.69	pg/g	3.69
25569-80-6	6-DiCB	U	3.69	pg/g	3.69
33284-50-3	7-DiCB	U	3.69	pg/g	3.69
34883-43-7	8-DiCB	U	3.69	pg/g	3.69
34883-39-1	9-DiCB	U	3.69	pg/g	3.69
33146-45-1	10-DiCB	U	3.69	pg/g	3.69
2050-67-1	11-DiCB	U	36.9	pg/g	36.9
2974-92-7	12-DiCB	CU	7.38	pg/g	7.38
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	3.69	pg/g	3.69
2050-68-2	15-DiCB	U	3.69	pg/g	3.69
38444-78-9	16-TrCB	U	3.69	pg/g	3.69
37680-66-3	17-TrCB	U	3.69	pg/g	3.69
37680-65-2	18-TrCB	CU	7.38	pg/g	7.38
38444-73-4	19-TrCB	U	3.69	pg/g	3.69
38444-84-7	20-TrCB	CU	7.38	pg/g	7.38
55702-46-0	21-TrCB	CU	7.38	pg/g	7.38
38444-85-8	22-TrCB	U	3.69	pg/g	3.69
55720-44-0	23-TrCB	U	3.69	pg/g	3.69
55702-45-9	24-TrCB	U	3.69	pg/g	3.69
55712-37-3	25-TrCB	U	3.69	pg/g	3.69
38444-81-4	26-TrCB	CU	7.38	pg/g	7.38
38444-76-7	27-TrCB	U	3.69	pg/g	3.69
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	3.69	pg/g	3.69
38444-77-8	32-TrCB	U	3.69	pg/g	3.69

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.



**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S2  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 16:03  
**Data File:** c10nov17a-7  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:55  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.09 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 64.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	3.69	pg/g	3.69
37680-69-6	35-TrCB	U	3.69	pg/g	3.69
38444-87-0	36-TrCB	U	3.69	pg/g	3.69
38444-90-5	37-TrCB	U	3.69	pg/g	3.69
53555-66-1	38-TrCB	U	3.69	pg/g	3.69
38444-88-1	39-TrCB	U	3.69	pg/g	3.69
38444-93-8	40-TeCB	CU	7.38	pg/g	7.38
52663-59-9	41-TeCB	U	3.69	pg/g	3.69
36559-22-5	42-TeCB	U	3.69	pg/g	3.69
70362-46-8	43-TeCB	U	3.69	pg/g	3.69
41464-39-5	44-TeCB	CU	11.1	pg/g	11.1
70362-45-7	45-TeCB	CU	7.38	pg/g	7.38
41464-47-5	46-TeCB	U	3.69	pg/g	3.69
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	3.69	pg/g	3.69
41464-40-8	49-TeCB	CU	7.38	pg/g	7.38
62796-65-0	50-TeCB	CU	7.38	pg/g	7.38
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	3.69	pg/g	3.69
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	3.69	pg/g	3.69
74338-24-2	55-TeCB	U	3.69	pg/g	3.69
41464-43-1	56-TeCB	U	3.69	pg/g	3.69
70424-67-8	57-TeCB	U	3.69	pg/g	3.69
41464-49-7	58-TeCB	U	3.69	pg/g	3.69
74472-33-6	59-TeCB	CU	11.1	pg/g	11.1
33025-41-1	60-TeCB	U	3.69	pg/g	3.69
33284-53-6	61-TeCB	CU	14.8	pg/g	14.8
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	3.69	pg/g	3.69
52663-58-8	64-TeCB	U	3.69	pg/g	3.69

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 3 of 8

**SDG Number:** L1736603  
**Lab Sample ID:** 11537004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S2  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 16:03  
**Data File:** c10nov17a-7  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:55  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.09 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 64.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	3.69	pg/g	3.69
73575-53-8	67-TeCB	U	3.69	pg/g	3.69
73575-52-7	68-TeCB	U	3.69	pg/g	3.69
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	3.69	pg/g	3.69
74338-23-1	73-TeCB	U	3.69	pg/g	3.69
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	3.69	pg/g	3.69
70362-49-1	78-TeCB	U	3.69	pg/g	3.69
41464-48-6	79-TeCB	U	3.69	pg/g	3.69
33284-52-5	80-TeCB	U	3.69	pg/g	3.69
70362-50-4	81-TeCB	U	3.69	pg/g	3.69
52663-62-4	82-PeCB	U	3.69	pg/g	3.69
60145-20-2	83-PeCB	U	3.69	pg/g	3.69
52663-60-2	84-PeCB	U	3.69	pg/g	3.69
65510-45-4	85-PeCB	CU	11.1	pg/g	11.1
55312-69-1	86-PeCB	CU	22.1	pg/g	22.1
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	7.38	pg/g	7.38
73575-57-2	89-PeCB	U	3.69	pg/g	3.69
68194-07-0	90-PeCB	CU	11.1	pg/g	11.1
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	3.69	pg/g	3.69
73575-56-1	93-PeCB	CU	7.38	pg/g	7.38
73575-55-0	94-PeCB	U	3.69	pg/g	3.69
38379-99-6	95-PeCB	U	3.69	pg/g	3.69
73575-54-9	96-PeCB	U	3.69	pg/g	3.69

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S2  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 16:03  
**Data File:** c10nov17a-7  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:55  
**Date Received:** 10/18/2017 10:20  
  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.09 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 64.1  
**Prep Basis:** Dry Weight  
  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	7.38	pg/g	7.38
38380-01-7	99-PeCB	U	3.69	pg/g	3.69
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	3.69	pg/g	3.69
56558-16-8	104-PeCB	U	3.69	pg/g	3.69
32598-14-4	105-PeCB	U	3.69	pg/g	3.69
70424-69-0	106-PeCB	U	3.69	pg/g	3.69
70424-68-9	107-PeCB	U	3.69	pg/g	3.69
70362-41-3	108-PeCB	CU	7.38	pg/g	7.38
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	7.38	pg/g	7.38
39635-32-0	111-PeCB	U	3.69	pg/g	3.69
74472-36-9	112-PeCB	U	3.69	pg/g	3.69
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	3.69	pg/g	3.69
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	3.69	pg/g	3.69
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	3.69	pg/g	3.69
56558-18-0	121-PeCB	U	3.69	pg/g	3.69
76842-07-4	122-PeCB	U	3.69	pg/g	3.69
65510-44-3	123-PeCB	U	3.69	pg/g	3.69
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	3.69	pg/g	3.69
39635-33-1	127-PeCB	U	3.69	pg/g	3.69
38380-07-3	128-HxCB	CU	7.38	pg/g	7.38

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S2  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 16:03  
**Data File:** c10nov17a-7  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:55  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.09 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 64.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	11.1	pg/g	11.1
52663-66-8	130-HxCB	U	3.69	pg/g	3.69
61798-70-7	131-HxCB	U	3.69	pg/g	3.69
38380-05-1	132-HxCB	U	3.69	pg/g	3.69
35694-04-3	133-HxCB	U	3.69	pg/g	3.69
52704-70-8	134-HxCB	U	3.69	pg/g	3.69
52744-13-5	135-HxCB	CU	7.38	pg/g	7.38
38411-22-2	136-HxCB	U	3.69	pg/g	3.69
35694-06-5	137-HxCB	U	3.69	pg/g	3.69
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	7.38	pg/g	7.38
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	3.69	pg/g	3.69
41411-61-4	142-HxCB	U	3.69	pg/g	3.69
68194-15-0	143-HxCB	U	3.69	pg/g	3.69
68194-14-9	144-HxCB	U	3.69	pg/g	3.69
74472-40-5	145-HxCB	U	3.69	pg/g	3.69
51908-16-8	146-HxCB	U	3.69	pg/g	3.69
68194-13-8	147-HxCB	CU	7.38	pg/g	7.38
74472-41-6	148-HxCB	U	3.69	pg/g	3.69
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	3.69	pg/g	3.69
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	3.69	pg/g	3.69
35065-27-1	153-HxCB	CU	7.38	pg/g	7.38
60145-22-4	154-HxCB	U	3.69	pg/g	3.69
33979-03-2	155-HxCB	U	3.69	pg/g	3.69
38380-08-4	156-HxCB	CU	7.38	pg/g	7.38
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	3.69	pg/g	3.69
39635-35-3	159-HxCB	U	3.69	pg/g	3.69
41411-62-5	160-HxCB	U	3.69	pg/g	3.69

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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**SDG Number:** L1736603  
**Lab Sample ID:** 11537004  
**Client Sample:** 1613B/1668A Soil  
**Client ID:** VC-IRB-24-S2  
**Batch ID:** 36080  
**Run Date:** 11/10/2017 16:03  
**Data File:** c10nov17a-7  
**Prep Batch:** 36078  
**Prep Date:** 02-NOV-17

**Client:** ALPH001  
**Date Collected:** 10/10/2017 14:55  
**Date Received:** 10/18/2017 10:20  
**Method:** EPA Method 1668A  
**Analyst:** MLS  
**Prep Method:** SW846 3540C  
**Prep Aliquot:** 15.09 g

**Project:** ALPH00217  
**Matrix:** SOIL  
**%Moisture:** 64.1  
**Prep Basis:** Dry Weight  
**Instrument:** HRP791  
**Dilution:** 1  
**Prep SOP Ref:** CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	3.69	pg/g	3.69
39635-34-2	162-HxCB	U	3.69	pg/g	3.69
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	3.69	pg/g	3.69
74472-46-1	165-HxCB	U	3.69	pg/g	3.69
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	3.69	pg/g	3.69
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	3.69	pg/g	3.69
35065-30-6	170-HpCB	U	3.69	pg/g	3.69
52663-71-5	171-HpCB	CU	7.38	pg/g	7.38
52663-74-8	172-HpCB	U	3.69	pg/g	3.69
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	3.69	pg/g	3.69
40186-70-7	175-HpCB	U	3.69	pg/g	3.69
52663-65-7	176-HpCB	U	3.69	pg/g	3.69
52663-70-4	177-HpCB	U	3.69	pg/g	3.69
52663-67-9	178-HpCB	U	3.69	pg/g	3.69
52663-64-6	179-HpCB	U	3.69	pg/g	3.69
35065-29-3	180-HpCB	CU	7.38	pg/g	7.38
74472-47-2	181-HpCB	U	3.69	pg/g	3.69
60145-23-5	182-HpCB	U	3.69	pg/g	3.69
52663-69-1	183-HpCB	CU	7.38	pg/g	7.38
74472-48-3	184-HpCB	U	3.69	pg/g	3.69
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	3.69	pg/g	3.69
52663-68-0	187-HpCB	U	3.69	pg/g	3.69
74487-85-7	188-HpCB	U	3.69	pg/g	3.69
39635-31-9	189-HpCB	U	3.69	pg/g	3.69
41411-64-7	190-HpCB	U	3.69	pg/g	3.69
74472-50-7	191-HpCB	U	3.69	pg/g	3.69
74472-51-8	192-HpCB	U	3.69	pg/g	3.69

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537004	<b>Date Collected:</b> 10/10/2017 14:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 64.1
<b>Client ID:</b> VC-IRB-24-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 16:03	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.09 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	3.69	pg/g	3.69
52663-78-2	195-OcCB	U	3.69	pg/g	3.69
42740-50-1	196-OcCB	U	3.69	pg/g	3.69
33091-17-7	197-OcCB	CU	7.38	pg/g	7.38
68194-17-2	198-OcCB	CU	7.38	pg/g	7.38
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	3.69	pg/g	3.69
2136-99-4	202-OcCB	U	3.69	pg/g	3.69
52663-76-0	203-OcCB	U	3.69	pg/g	3.69
74472-52-9	204-OcCB	U	3.69	pg/g	3.69
74472-53-0	205-OcCB	U	3.69	pg/g	3.69
40186-72-9	206-NoCB	U	3.69	pg/g	3.69
52663-79-3	207-NoCB	U	3.69	pg/g	3.69
52663-77-1	208-NoCB	U	3.69	pg/g	3.69
2051-24-3	209-DeCB	U	3.69	pg/g	3.69
1336-36-3	Total PCB Congeners	U	3.69	pg/g	3.69

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		103	369	pg/g	27.9	(15%-150%)
13C-3-MoCB		112	369	pg/g	30.3	(15%-150%)
13C-4-DiCB		129	369	pg/g	34.9	(25%-150%)
13C-15-DiCB		168	369	pg/g	45.6	(25%-150%)
13C-19-TrCB		162	369	pg/g	44.0	(25%-150%)
13C-37-TrCB		156	369	pg/g	42.2	(25%-150%)
13C-54-TeCB		161	369	pg/g	43.5	(25%-150%)
13C-77-TeCB		179	369	pg/g	48.6	(25%-150%)
13C-81-TeCB		183	369	pg/g	49.5	(25%-150%)
13C-104-PeCB		217	369	pg/g	58.8	(25%-150%)
13C-105-PeCB		185	369	pg/g	50.1	(25%-150%)
13C-114-PeCB		189	369	pg/g	51.1	(25%-150%)
13C-118-PeCB		192	369	pg/g	52.1	(25%-150%)
13C-123-PeCB		197	369	pg/g	53.3	(25%-150%)
13C-126-PeCB		178	369	pg/g	48.4	(25%-150%)
13C-155-HxCB		205	369	pg/g	55.5	(25%-150%)
13C-156-HxCB	C	358	738	pg/g	48.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		189	369	pg/g	51.1	(25%-150%)
13C-169-HxCB		163	369	pg/g	44.1	(25%-150%)
13C-188-HpCB		264	369	pg/g	71.4	(25%-150%)
13C-189-HpCB		190	369	pg/g	51.5	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537004	<b>Date Collected:</b> 10/10/2017 14:55	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 64.1
<b>Client ID:</b> VC-IRB-24-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/10/2017 16:03	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c10nov17a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.09 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			265	369	pg/g	71.7 (25%-150%)
13C-205-OcCB			232	369	pg/g	62.9 (25%-150%)
13C-206-NoCB			280	369	pg/g	75.8 (25%-150%)
13C-208-NoCB			279	369	pg/g	75.7 (25%-150%)
13C-209-DeCB			320	369	pg/g	86.7 (25%-150%)
13C-111-PeCB			326	369	pg/g	88.2 (30%-135%)
13C-28-TrCB			281	369	pg/g	76.1 (30%-135%)
13C-178-HpCB			400	369	pg/g	108 (30%-135%)

**Comments:**  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b>	L1736603	<b>Client:</b>	ALPH001	<b>Project:</b>	ALPH00217
<b>Lab Sample ID:</b>	11537005	<b>Date Collected:</b>	10/10/2017 19:15	<b>Matrix:</b>	SOIL
<b>Client Sample:</b>	1613B/1668A Soil	<b>Date Received:</b>	10/18/2017 10:20	<b>%Moisture:</b>	16.8
<b>Client ID:</b>	VC-IRB-13-ALT-S1			<b>Prep Basis:</b>	Dry Weight
<b>Batch ID:</b>	36080	<b>Method:</b>	EPA Method 1668A	<b>Instrument:</b>	HRP791
<b>Run Date:</b>	11/11/2017 09:55	<b>Analyst:</b>	MLS	<b>Dilution:</b>	1
<b>Data File:</b>	c11nov17a-3	<b>Prep Method:</b>	SW846 3540C	<b>Prep SOP Ref:</b>	CF-OA-E-001
<b>Prep Batch:</b>	36078	<b>Prep Aliquot:</b>	12.02 g		
<b>Prep Date:</b>	02-NOV-17				

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2	pg/g	2.00
2051-61-8	2-MoCB	U	2	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB	U	2	pg/g	2.00
16605-91-7	5-DiCB	U	2	pg/g	2.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	2	pg/g	2.00
34883-43-7	8-DiCB	U	2	pg/g	2.00
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	2	pg/g	2.00
2050-67-1	11-DiCB	U	20	pg/g	20.0
2974-92-7	12-DiCB	CU	4	pg/g	4.00
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2	pg/g	2.00
2050-68-2	15-DiCB	U	2	pg/g	2.00
38444-78-9	16-TrCB	U	2	pg/g	2.00
37680-66-3	17-TrCB	U	2	pg/g	2.00
37680-65-2	18-TrCB	CU	4	pg/g	4.00
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	4	pg/g	4.00
55702-46-0	21-TrCB	CU	4	pg/g	4.00
38444-85-8	22-TrCB	U	2	pg/g	2.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	4	pg/g	4.00
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2	pg/g	2.00
38444-77-8	32-TrCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537005	<b>Date Collected:</b> 10/10/2017 19:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 16.8
<b>Client ID:</b> VC-IRB-13-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 09:55	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	2	pg/g	2.00
38444-87-0	36-TrCB	U	2	pg/g	2.00
38444-90-5	37-TrCB	U	2	pg/g	2.00
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	2	pg/g	2.00
38444-93-8	40-TeCB	CU	4	pg/g	4.00
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	2	pg/g	2.00
41464-39-5	44-TeCB	CU	6	pg/g	6.00
70362-45-7	45-TeCB	CU	4	pg/g	4.00
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	4	pg/g	4.00
62796-65-0	50-TeCB	CU	4	pg/g	4.00
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	2	pg/g	2.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	6	pg/g	6.00
33025-41-1	60-TeCB	U	2	pg/g	2.00
33284-53-6	61-TeCB	CU	8	pg/g	8.00
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2	pg/g	2.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537005	<b>Date Collected:</b> 10/10/2017 19:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 16.8
<b>Client ID:</b> VC-IRB-13-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 09:55	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2	pg/g	2.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2	pg/g	2.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	2	pg/g	2.00
33284-52-5	80-TeCB	U	2	pg/g	2.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	2	pg/g	2.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	6	pg/g	6.00
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4	pg/g	4.00
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	6	pg/g	6.00
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	4	pg/g	4.00
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	2	pg/g	2.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537005	<b>Date Collected:</b> 10/10/2017 19:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 16.8
<b>Client ID:</b> VC-IRB-13-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 09:55	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4	pg/g	4.00
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2	pg/g	2.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	2	pg/g	2.00
70362-41-3	108-PeCB	CU	4	pg/g	4.00
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4	pg/g	4.00
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2	pg/g	2.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	4	pg/g	4.00

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537005	<b>Date Collected:</b> 10/10/2017 19:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 16.8
<b>Client ID:</b> VC-IRB-13-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 09:55	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6	pg/g	6.00
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	4	pg/g	4.00
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4	pg/g	4.00
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2	pg/g	2.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	4	pg/g	4.00
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	4	pg/g	4.00
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	4	pg/g	4.00
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537005	<b>Date Collected:</b> 10/10/2017 19:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 16.8
<b>Client ID:</b> VC-IRB-13-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 09:55	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-3		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	4	pg/g	4.00
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	4	pg/g	4.00
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	4	pg/g	4.00
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

**Comments:**

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**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537005	<b>Date Collected:</b> 10/10/2017 19:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 16.8
<b>Client ID:</b> VC-IRB-13-ALT-S1		<b>Dry Weight</b>
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/11/2017 09:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c11nov17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.02 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	4	pg/g	4.00
68194-17-2	198-OcCB	CU	4	pg/g	4.00
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners	U	2	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		102	200	pg/g	51.1	(15%-150%)
13C-3-MoCB		120	200	pg/g	60.1	(15%-150%)
13C-4-DiCB		132	200	pg/g	66.1	(25%-150%)
13C-15-DiCB		176	200	pg/g	88.1	(25%-150%)
13C-19-TrCB		162	200	pg/g	81.1	(25%-150%)
13C-37-TrCB		160	200	pg/g	80.0	(25%-150%)
13C-54-TeCB		167	200	pg/g	83.5	(25%-150%)
13C-77-TeCB		176	200	pg/g	87.8	(25%-150%)
13C-81-TeCB		179	200	pg/g	89.4	(25%-150%)
13C-104-PeCB		200	200	pg/g	99.9	(25%-150%)
13C-105-PeCB		165	200	pg/g	82.6	(25%-150%)
13C-114-PeCB		168	200	pg/g	84.1	(25%-150%)
13C-118-PeCB		171	200	pg/g	85.5	(25%-150%)
13C-123-PeCB		177	200	pg/g	88.5	(25%-150%)
13C-126-PeCB		156	200	pg/g	78.1	(25%-150%)
13C-155-HxCB		182	200	pg/g	91.1	(25%-150%)
13C-156-HxCB	C	309	400	pg/g	77.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		161	200	pg/g	80.6	(25%-150%)
13C-169-HxCB		141	200	pg/g	70.4	(25%-150%)
13C-188-HpCB		212	200	pg/g	106	(25%-150%)
13C-189-HpCB		153	200	pg/g	76.3	(25%-150%)

**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537005	<b>Date Collected:</b> 10/10/2017 19:15	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 16.8
<b>Client ID:</b> VC-IRB-13-ALT-S1		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/11/2017 09:55	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c11nov17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 12.02 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			212	200	pg/g	106 (25%-150%)
13C-205-OcCB			184	200	pg/g	91.8 (25%-150%)
13C-206-NoCB			202	200	pg/g	101 (25%-150%)
13C-208-NoCB			206	200	pg/g	103 (25%-150%)
13C-209-DeCB			218	200	pg/g	109 (25%-150%)
13C-111-PeCB			171	200	pg/g	85.4 (30%-135%)
13C-28-TrCB			150	200	pg/g	74.9 (30%-135%)
13C-178-HpCB			207	200	pg/g	103 (30%-135%)

**Comments:**  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 11:02	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.79 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	1.99	pg/g	1.99
2051-61-8	2-MoCB		3.47	pg/g	1.99
2051-62-9	3-MoCB	U	1.99	pg/g	1.99
13029-08-8	4-DiCB	U	1.99	pg/g	1.99
16605-91-7	5-DiCB	U	1.99	pg/g	1.99
25569-80-6	6-DiCB	U	1.99	pg/g	1.99
33284-50-3	7-DiCB	U	1.99	pg/g	1.99
34883-43-7	8-DiCB	U	1.99	pg/g	1.99
34883-39-1	9-DiCB	U	1.99	pg/g	1.99
33146-45-1	10-DiCB	U	1.99	pg/g	1.99
2050-67-1	11-DiCB	U	19.9	pg/g	19.9
2974-92-7	12-DiCB	CU	3.98	pg/g	3.98
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	1.99	pg/g	1.99
2050-68-2	15-DiCB	U	1.99	pg/g	1.99
38444-78-9	16-TrCB	U	1.99	pg/g	1.99
37680-66-3	17-TrCB	U	1.99	pg/g	1.99
37680-65-2	18-TrCB	CU	3.98	pg/g	3.98
38444-73-4	19-TrCB	U	1.99	pg/g	1.99
38444-84-7	20-TrCB	CU	3.98	pg/g	3.98
55702-46-0	21-TrCB	CU	3.98	pg/g	3.98
38444-85-8	22-TrCB	U	1.99	pg/g	1.99
55720-44-0	23-TrCB	U	1.99	pg/g	1.99
55702-45-9	24-TrCB	U	1.99	pg/g	1.99
55712-37-3	25-TrCB	U	1.99	pg/g	1.99
38444-81-4	26-TrCB	CU	3.98	pg/g	3.98
38444-76-7	27-TrCB	U	1.99	pg/g	1.99
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	1.99	pg/g	1.99
38444-77-8	32-TrCB	U	1.99	pg/g	1.99

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.



**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 11:02	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.79 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	1.99	pg/g	1.99
37680-69-6	35-TrCB	U	1.99	pg/g	1.99
38444-87-0	36-TrCB	U	1.99	pg/g	1.99
38444-90-5	37-TrCB	U	1.99	pg/g	1.99
53555-66-1	38-TrCB	U	1.99	pg/g	1.99
38444-88-1	39-TrCB	U	1.99	pg/g	1.99
38444-93-8	40-TeCB	CU	3.98	pg/g	3.98
52663-59-9	41-TeCB	U	1.99	pg/g	1.99
36559-22-5	42-TeCB	U	1.99	pg/g	1.99
70362-46-8	43-TeCB	U	1.99	pg/g	1.99
41464-39-5	44-TeCB	CU	5.97	pg/g	5.97
70362-45-7	45-TeCB	CU	3.98	pg/g	3.98
41464-47-5	46-TeCB	U	1.99	pg/g	1.99
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	1.99	pg/g	1.99
41464-40-8	49-TeCB	CU	3.98	pg/g	3.98
62796-65-0	50-TeCB	CU	3.98	pg/g	3.98
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	1.99	pg/g	1.99
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	1.99	pg/g	1.99
74338-24-2	55-TeCB	U	1.99	pg/g	1.99
41464-43-1	56-TeCB	U	1.99	pg/g	1.99
70424-67-8	57-TeCB	U	1.99	pg/g	1.99
41464-49-7	58-TeCB	U	1.99	pg/g	1.99
74472-33-6	59-TeCB	CU	5.97	pg/g	5.97
33025-41-1	60-TeCB	U	1.99	pg/g	1.99
33284-53-6	61-TeCB	CU	7.97	pg/g	7.97
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	1.99	pg/g	1.99
52663-58-8	64-TeCB	U	1.99	pg/g	1.99

**Comments:**

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**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 11:02	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.79 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	1.99	pg/g	1.99
73575-53-8	67-TeCB	U	1.99	pg/g	1.99
73575-52-7	68-TeCB	U	1.99	pg/g	1.99
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	1.99	pg/g	1.99
74338-23-1	73-TeCB	U	1.99	pg/g	1.99
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	1.99	pg/g	1.99
70362-49-1	78-TeCB	U	1.99	pg/g	1.99
41464-48-6	79-TeCB	U	1.99	pg/g	1.99
33284-52-5	80-TeCB	U	1.99	pg/g	1.99
70362-50-4	81-TeCB	U	1.99	pg/g	1.99
52663-62-4	82-PeCB	U	1.99	pg/g	1.99
60145-20-2	83-PeCB	U	1.99	pg/g	1.99
52663-60-2	84-PeCB	U	1.99	pg/g	1.99
65510-45-4	85-PeCB	CU	5.97	pg/g	5.97
55312-69-1	86-PeCB	CU	11.9	pg/g	11.9
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	3.98	pg/g	3.98
73575-57-2	89-PeCB	U	1.99	pg/g	1.99
68194-07-0	90-PeCB	CU	5.97	pg/g	5.97
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	1.99	pg/g	1.99
73575-56-1	93-PeCB	CU	3.98	pg/g	3.98
73575-55-0	94-PeCB	U	1.99	pg/g	1.99
38379-99-6	95-PeCB	U	1.99	pg/g	1.99
73575-54-9	96-PeCB	U	1.99	pg/g	1.99

**Comments:**

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**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 11:02	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.79 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	3.98	pg/g	3.98
38380-01-7	99-PeCB	U	1.99	pg/g	1.99
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	1.99	pg/g	1.99
56558-16-8	104-PeCB	U	1.99	pg/g	1.99
32598-14-4	105-PeCB	U	1.99	pg/g	1.99
70424-69-0	106-PeCB	U	1.99	pg/g	1.99
70424-68-9	107-PeCB	U	1.99	pg/g	1.99
70362-41-3	108-PeCB	CU	3.98	pg/g	3.98
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	3.98	pg/g	3.98
39635-32-0	111-PeCB	U	1.99	pg/g	1.99
74472-36-9	112-PeCB	U	1.99	pg/g	1.99
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	1.99	pg/g	1.99
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	1.99	pg/g	1.99
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	1.99	pg/g	1.99
56558-18-0	121-PeCB	U	1.99	pg/g	1.99
76842-07-4	122-PeCB	U	1.99	pg/g	1.99
65510-44-3	123-PeCB	U	1.99	pg/g	1.99
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	1.99	pg/g	1.99
39635-33-1	127-PeCB	U	1.99	pg/g	1.99
38380-07-3	128-HxCB	CU	3.98	pg/g	3.98

**Comments:**

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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 11:02	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.79 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	5.97	pg/g	5.97
52663-66-8	130-HxCB	U	1.99	pg/g	1.99
61798-70-7	131-HxCB	U	1.99	pg/g	1.99
38380-05-1	132-HxCB	U	1.99	pg/g	1.99
35694-04-3	133-HxCB	U	1.99	pg/g	1.99
52704-70-8	134-HxCB	U	1.99	pg/g	1.99
52744-13-5	135-HxCB	CU	3.98	pg/g	3.98
38411-22-2	136-HxCB	U	1.99	pg/g	1.99
35694-06-5	137-HxCB	U	1.99	pg/g	1.99
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	3.98	pg/g	3.98
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	1.99	pg/g	1.99
41411-61-4	142-HxCB	U	1.99	pg/g	1.99
68194-15-0	143-HxCB	U	1.99	pg/g	1.99
68194-14-9	144-HxCB	U	1.99	pg/g	1.99
74472-40-5	145-HxCB	U	1.99	pg/g	1.99
51908-16-8	146-HxCB	U	1.99	pg/g	1.99
68194-13-8	147-HxCB	CU	3.98	pg/g	3.98
74472-41-6	148-HxCB	U	1.99	pg/g	1.99
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	1.99	pg/g	1.99
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	1.99	pg/g	1.99
35065-27-1	153-HxCB	CU	3.98	pg/g	3.98
60145-22-4	154-HxCB	U	1.99	pg/g	1.99
33979-03-2	155-HxCB	U	1.99	pg/g	1.99
38380-08-4	156-HxCB	CU	3.98	pg/g	3.98
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	1.99	pg/g	1.99
39635-35-3	159-HxCB	U	1.99	pg/g	1.99
41411-62-5	160-HxCB	U	1.99	pg/g	1.99

**Comments:**

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**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
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**PCB Congeners**  
**Certificate of Analysis**  
**Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 11:02	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.79 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	1.99	pg/g	1.99
39635-34-2	162-HxCB	U	1.99	pg/g	1.99
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	1.99	pg/g	1.99
74472-46-1	165-HxCB	U	1.99	pg/g	1.99
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	1.99	pg/g	1.99
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	1.99	pg/g	1.99
35065-30-6	170-HpCB	U	1.99	pg/g	1.99
52663-71-5	171-HpCB	CU	3.98	pg/g	3.98
52663-74-8	172-HpCB	U	1.99	pg/g	1.99
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	1.99	pg/g	1.99
40186-70-7	175-HpCB	U	1.99	pg/g	1.99
52663-65-7	176-HpCB	U	1.99	pg/g	1.99
52663-70-4	177-HpCB	U	1.99	pg/g	1.99
52663-67-9	178-HpCB	U	1.99	pg/g	1.99
52663-64-6	179-HpCB	U	1.99	pg/g	1.99
35065-29-3	180-HpCB	CU	3.98	pg/g	3.98
74472-47-2	181-HpCB	U	1.99	pg/g	1.99
60145-23-5	182-HpCB	U	1.99	pg/g	1.99
52663-69-1	183-HpCB	CU	3.98	pg/g	3.98
74472-48-3	184-HpCB	U	1.99	pg/g	1.99
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	1.99	pg/g	1.99
52663-68-0	187-HpCB	U	1.99	pg/g	1.99
74487-85-7	188-HpCB	U	1.99	pg/g	1.99
39635-31-9	189-HpCB	U	1.99	pg/g	1.99
41411-64-7	190-HpCB	U	1.99	pg/g	1.99
74472-50-7	191-HpCB	U	1.99	pg/g	1.99
74472-51-8	192-HpCB	U	1.99	pg/g	1.99

**Comments:**

- B** The target analyte was detected in the associated blank.  
**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	<b>Instrument:</b> HRP791
<b>Run Date:</b> 11/11/2017 11:02	<b>Analyst:</b> MLS	<b>Dilution:</b> 1
<b>Data File:</b> c11nov17a-4		<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.79 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	1.99	pg/g	1.99
52663-78-2	195-OcCB	U	1.99	pg/g	1.99
42740-50-1	196-OcCB	U	1.99	pg/g	1.99
33091-17-7	197-OcCB	CU	3.98	pg/g	3.98
68194-17-2	198-OcCB	CU	3.98	pg/g	3.98
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	1.99	pg/g	1.99
2136-99-4	202-OcCB	U	1.99	pg/g	1.99
52663-76-0	203-OcCB	U	1.99	pg/g	1.99
74472-52-9	204-OcCB	U	1.99	pg/g	1.99
74472-53-0	205-OcCB	U	1.99	pg/g	1.99
40186-72-9	206-NoCB	U	1.99	pg/g	1.99
52663-79-3	207-NoCB	U	1.99	pg/g	1.99
52663-77-1	208-NoCB	U	1.99	pg/g	1.99
2051-24-3	209-DeCB	U	1.99	pg/g	1.99
1336-36-3	Total PCB Congeners	B	3.47	pg/g	1.99

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		58.3	199	pg/g	29.3	(15%-150%)
13C-3-MoCB		63.1	199	pg/g	31.7	(15%-150%)
13C-4-DiCB		68.9	199	pg/g	34.6	(25%-150%)
13C-15-DiCB		82.4	199	pg/g	41.4	(25%-150%)
13C-19-TrCB		80.8	199	pg/g	40.6	(25%-150%)
13C-37-TrCB		72.5	199	pg/g	36.4	(25%-150%)
13C-54-TeCB		81.8	199	pg/g	41.1	(25%-150%)
13C-77-TeCB		81.5	199	pg/g	40.9	(25%-150%)
13C-81-TeCB		83.6	199	pg/g	42.0	(25%-150%)
13C-104-PeCB		94.2	199	pg/g	47.3	(25%-150%)
13C-105-PeCB		77.8	199	pg/g	39.1	(25%-150%)
13C-114-PeCB		79.2	199	pg/g	39.8	(25%-150%)
13C-118-PeCB		79.9	199	pg/g	40.1	(25%-150%)
13C-123-PeCB		82.5	199	pg/g	41.4	(25%-150%)
13C-126-PeCB		72.1	199	pg/g	36.2	(25%-150%)
13C-155-HxCB		87.0	199	pg/g	43.7	(25%-150%)
13C-156-HxCB	C	148	398	pg/g	37.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		76.8	199	pg/g	38.6	(25%-150%)
13C-169-HxCB		66.8	199	pg/g	33.5	(25%-150%)
13C-188-HpCB		108	199	pg/g	54.1	(25%-150%)
13C-189-HpCB		76.7	199	pg/g	38.5	(25%-150%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 11537006	<b>Date Collected:</b> 10/10/2017 19:25	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B/1668A Soil	<b>Date Received:</b> 10/18/2017 10:20	<b>%Moisture:</b> 36.4
<b>Client ID:</b> VC-IRB-13-ALT-S2		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/11/2017 11:02	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c11nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 15.79 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			106	199	pg/g	53.3 (25%-150%)
13C-205-OcCB			91.4	199	pg/g	45.9 (25%-150%)
13C-206-NoCB			109	199	pg/g	54.5 (25%-150%)
13C-208-NoCB			102	199	pg/g	51.4 (25%-150%)
13C-209-DeCB			109	199	pg/g	54.8 (25%-150%)
13C-111-PeCB			110	199	pg/g	55.4 (30%-135%)
13C-28-TrCB			98.3	199	pg/g	49.4 (30%-135%)
13C-178-HpCB			135	199	pg/g	67.6 (30%-135%)

**Comments:**

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U** Analyte was analyzed for, but not detected above the specified detection limit.

# Quality Control Summary



**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
12019921	LCS for batch 36078	13C-1-MoCB		15.5	(15%-140%)	
		13C-3-MoCB		27.5	(15%-140%)	
		13C-4-DiCB		24.4 *	(30%-140%)	
		13C-15-DiCB		91.5	(30%-140%)	
		13C-19-TrCB		48.0	(30%-140%)	
		13C-37-TrCB		77.3	(30%-140%)	
		13C-54-TeCB		41.3	(30%-140%)	
		13C-77-TeCB		100	(30%-140%)	
		13C-81-TeCB		98.5	(30%-140%)	
		13C-104-PeCB		69.3	(30%-140%)	
		13C-105-PeCB		77.8	(30%-140%)	
		13C-114-PeCB		78.5	(30%-140%)	
		13C-118-PeCB		80.3	(30%-140%)	
		13C-123-PeCB		82.2	(30%-140%)	
		13C-126-PeCB		78.8	(30%-140%)	
		13C-155-HxCB		76.7	(30%-140%)	
		13C-156-HxCB		74.3	(30%-140%)	
		13C-157-HxCB		C C156L		
		13C-167-HxCB		76.7	(30%-140%)	
		13C-169-HxCB		67.8	(30%-140%)	
		13C-188-HpCB		102	(30%-140%)	
		13C-189-HpCB		77.9	(30%-140%)	
		13C-202-OcCB		94.7	(30%-140%)	
		13C-205-OcCB		87.3	(30%-140%)	
		13C-206-NoCB		87.3	(30%-140%)	
		13C-208-NoCB		79.4	(30%-140%)	
		13C-209-DeCB		83.5	(30%-140%)	
		13C-111-PeCB		81.6	(40%-125%)	
		13C-28-TrCB		52.2	(40%-125%)	
		13C-178-HpCB		86.0	(40%-125%)	
12019922	LCSD for batch 36078	13C-1-MoCB		14.6 *	(15%-140%)	
		13C-3-MoCB		28.7	(15%-140%)	
		13C-4-DiCB		27.0 *	(30%-140%)	
		13C-15-DiCB		92.7	(30%-140%)	
		13C-19-TrCB		48.2	(30%-140%)	
		13C-37-TrCB		78.0	(30%-140%)	
		13C-54-TeCB		42.3	(30%-140%)	
		13C-77-TeCB		105	(30%-140%)	
		13C-81-TeCB		105	(30%-140%)	
		13C-104-PeCB		69.9	(30%-140%)	
		13C-105-PeCB		77.8	(30%-140%)	
		13C-114-PeCB		78.6	(30%-140%)	
		13C-118-PeCB		81.0	(30%-140%)	
		13C-123-PeCB		82.1	(30%-140%)	
		13C-126-PeCB		79.1	(30%-140%)	
		13C-155-HxCB		78.8	(30%-140%)	
		13C-156-HxCB		74.6	(30%-140%)	
		13C-157-HxCB		C C156L		
		13C-167-HxCB		77.3	(30%-140%)	
		13C-169-HxCB		69.4	(30%-140%)	
13C-188-HpCB		102	(30%-140%)			
13C-189-HpCB		76.6	(30%-140%)			

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
12019922	LCSD for batch 36078	13C-202-OcCB		96.0	(30%-140%)	
		13C-205-OcCB		87.4	(30%-140%)	
		13C-206-NoCB		86.8	(30%-140%)	
		13C-208-NoCB		79.3	(30%-140%)	
		13C-209-DeCB		81.1	(30%-140%)	
		13C-111-PeCB		81.5	(40%-125%)	
		13C-28-TrCB		54.1	(40%-125%)	
		13C-178-HpCB		84.6	(40%-125%)	
12019920	MB for batch 36078	13C-1-MoCB		10.3 *	(15%-150%)	
		13C-3-MoCB		29.2	(15%-150%)	
		13C-4-DiCB		22.0 *	(25%-150%)	
		13C-15-DiCB		93.9	(25%-150%)	
		13C-19-TrCB		46.1	(25%-150%)	
		13C-37-TrCB		70.6	(25%-150%)	
		13C-54-TeCB		37.3	(25%-150%)	
		13C-77-TeCB		98.9	(25%-150%)	
		13C-81-TeCB		96.3	(25%-150%)	
		13C-104-PeCB		69.1	(25%-150%)	
		13C-105-PeCB		77.4	(25%-150%)	
		13C-114-PeCB		77.6	(25%-150%)	
		13C-118-PeCB		79.2	(25%-150%)	
		13C-123-PeCB		81.0	(25%-150%)	
		13C-126-PeCB		78.6	(25%-150%)	
		13C-155-HxCB		75.4	(25%-150%)	
		13C-156-HxCB		74.1	(25%-150%)	
		13C-157-HxCB	C			
		13C-167-HxCB	C156L		76.8	(25%-150%)
		13C-169-HxCB			67.7	(25%-150%)
		13C-188-HpCB			98.5	(25%-150%)
		13C-189-HpCB			75.0	(25%-150%)
		13C-202-OcCB			94.7	(25%-150%)
13C-205-OcCB			85.5	(25%-150%)		
13C-206-NoCB			84.4	(25%-150%)		
13C-208-NoCB			76.9	(25%-150%)		
13C-209-DeCB			76.4	(25%-150%)		
13C-111-PeCB			81.4	(30%-135%)		
13C-28-TrCB			54.6	(30%-135%)		
13C-178-HpCB			80.3	(30%-135%)		
11537001	VC-IRB-11-ALT-S1	13C-1-MoCB		42.7	(15%-150%)	
		13C-3-MoCB		51.1	(15%-150%)	
		13C-4-DiCB		55.7	(25%-150%)	
		13C-15-DiCB		94.3	(25%-150%)	
		13C-19-TrCB		78.9	(25%-150%)	
		13C-37-TrCB		75.5	(25%-150%)	
		13C-54-TeCB		71.9	(25%-150%)	
		13C-77-TeCB		83.2	(25%-150%)	
		13C-81-TeCB		84.1	(25%-150%)	
		13C-104-PeCB		88.2	(25%-150%)	
		13C-105-PeCB		74.9	(25%-150%)	
		13C-114-PeCB		75.7	(25%-150%)	
		13C-118-PeCB		75.9	(25%-150%)	

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11537001	VC-IRB-11-ALT-S1	13C-123-PeCB		79.1	(25%-150%)
		13C-126-PeCB		71.5	(25%-150%)
		13C-155-HxCB		81.8	(25%-150%)
		13C-156-HxCB	C	68.3	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		71.5	(25%-150%)
		13C-169-HxCB		62.5	(25%-150%)
		13C-188-HpCB		100	(25%-150%)
		13C-189-HpCB		68.8	(25%-150%)
		13C-202-OcCB		97.1	(25%-150%)
		13C-205-OcCB		84.3	(25%-150%)
		13C-206-NoCB		98.3	(25%-150%)
		13C-208-NoCB		97.3	(25%-150%)
		13C-209-DeCB		107	(25%-150%)
		13C-111-PeCB		81.8	(30%-135%)
		13C-28-TrCB		68.6	(30%-135%)
		13C-178-HpCB		99.0	(30%-135%)
11537002	VC-IRB-11-ALT-S2	13C-1-MoCB		23.8	(15%-150%)
		13C-3-MoCB		28.3	(15%-150%)
		13C-4-DiCB		30.5	(25%-150%)
		13C-15-DiCB		43.0	(25%-150%)
		13C-19-TrCB		37.1	(25%-150%)
		13C-37-TrCB		38.0	(25%-150%)
		13C-54-TeCB		37.9	(25%-150%)
		13C-77-TeCB		44.2	(25%-150%)
		13C-81-TeCB		43.3	(25%-150%)
		13C-104-PeCB		47.1	(25%-150%)
		13C-105-PeCB		41.7	(25%-150%)
		13C-114-PeCB		41.8	(25%-150%)
		13C-118-PeCB		42.5	(25%-150%)
		13C-123-PeCB		43.4	(25%-150%)
		13C-126-PeCB		42.0	(25%-150%)
		13C-155-HxCB		42.0	(25%-150%)
		13C-156-HxCB	C	39.0	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		40.3	(25%-150%)
		13C-169-HxCB		36.7	(25%-150%)
		13C-188-HpCB		53.8	(25%-150%)
		13C-189-HpCB		41.4	(25%-150%)
		13C-202-OcCB		56.0	(25%-150%)
13C-205-OcCB		50.1	(25%-150%)		
13C-206-NoCB		61.6	(25%-150%)		
13C-208-NoCB		59.3	(25%-150%)		
13C-209-DeCB		70.5	(25%-150%)		
13C-111-PeCB		85.9	(30%-135%)		
13C-28-TrCB		73.8	(30%-135%)		
13C-178-HpCB		106	(30%-135%)		
11537003	VC-IRB-24-S1	13C-1-MoCB		21.5	(15%-150%)
		13C-3-MoCB		23.1	(15%-150%)
		13C-4-DiCB		26.0	(25%-150%)
		13C-15-DiCB		30.0	(25%-150%)

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11537003	VC-IRB-24-S1	13C-19-TrCB		30.6	(25%-150%)
		13C-37-TrCB		27.1	(25%-150%)
		13C-54-TeCB		31.1	(25%-150%)
		13C-77-TeCB		29.5	(25%-150%)
		13C-81-TeCB		28.5	(25%-150%)
		13C-104-PeCB		36.9	(25%-150%)
		13C-105-PeCB		30.0	(25%-150%)
		13C-114-PeCB		30.1	(25%-150%)
		13C-118-PeCB		30.6	(25%-150%)
		13C-123-PeCB		31.3	(25%-150%)
		13C-126-PeCB		27.7	(25%-150%)
		13C-155-HxCB		31.6	(25%-150%)
		13C-156-HxCB	C C156L	26.7	(25%-150%)
		13C-157-HxCB		27.7	(25%-150%)
		13C-167-HxCB		23.1 *	(25%-150%)
		13C-169-HxCB		44.1	(25%-150%)
		13C-188-HpCB		28.2	(25%-150%)
		13C-189-HpCB		42.5	(25%-150%)
		13C-202-OcCB		34.0	(25%-150%)
		13C-205-OcCB		40.6	(25%-150%)
		13C-206-NoCB		42.7	(25%-150%)
		13C-208-NoCB		35.9	(25%-150%)
		13C-209-DeCB		43.0	(30%-135%)
		13C-111-PeCB		39.7	(30%-135%)
13C-28-TrCB		53.3	(30%-135%)		
13C-178-HpCB					
11537004	VC-IRB-24-S2	13C-1-MoCB		27.9	(15%-150%)
		13C-3-MoCB		30.3	(15%-150%)
		13C-4-DiCB		34.9	(25%-150%)
		13C-15-DiCB		45.6	(25%-150%)
		13C-19-TrCB		44.0	(25%-150%)
		13C-37-TrCB		42.2	(25%-150%)
		13C-54-TeCB		43.5	(25%-150%)
		13C-77-TeCB		48.6	(25%-150%)
		13C-81-TeCB		49.5	(25%-150%)
		13C-104-PeCB		58.8	(25%-150%)
		13C-105-PeCB		50.1	(25%-150%)
		13C-114-PeCB		51.1	(25%-150%)
		13C-118-PeCB		52.1	(25%-150%)
		13C-123-PeCB		53.3	(25%-150%)
		13C-126-PeCB		48.4	(25%-150%)
		13C-155-HxCB		55.5	(25%-150%)
		13C-156-HxCB	C C156L	48.5	(25%-150%)
		13C-157-HxCB		51.1	(25%-150%)
		13C-167-HxCB		44.1	(25%-150%)
		13C-169-HxCB		71.4	(25%-150%)
		13C-188-HpCB		51.5	(25%-150%)
		13C-189-HpCB		71.7	(25%-150%)
		13C-202-OcCB		62.9	(25%-150%)
		13C-205-OcCB		75.8	(25%-150%)
13C-206-NoCB		75.7	(25%-150%)		
13C-208-NoCB					

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11537004	VC-IRB-24-S2	13C-209-DeCB		86.7	(25%-150%)
		13C-111-PeCB		88.2	(30%-135%)
		13C-28-TrCB		76.1	(30%-135%)
		13C-178-HpCB		108	(30%-135%)
11537005	VC-IRB-13-ALT-S1	13C-1-MoCB		51.1	(15%-150%)
		13C-3-MoCB		60.1	(15%-150%)
		13C-4-DiCB		66.1	(25%-150%)
		13C-15-DiCB		88.1	(25%-150%)
		13C-19-TrCB		81.1	(25%-150%)
		13C-37-TrCB		80.0	(25%-150%)
		13C-54-TeCB		83.5	(25%-150%)
		13C-77-TeCB		87.8	(25%-150%)
		13C-81-TeCB		89.4	(25%-150%)
		13C-104-PeCB		99.9	(25%-150%)
		13C-105-PeCB		82.6	(25%-150%)
		13C-114-PeCB		84.1	(25%-150%)
		13C-118-PeCB		85.5	(25%-150%)
		13C-123-PeCB		88.5	(25%-150%)
		13C-126-PeCB		78.1	(25%-150%)
		13C-155-HxCB		91.1	(25%-150%)
		13C-156-HxCB	C	77.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		80.6	(25%-150%)
		13C-169-HxCB		70.4	(25%-150%)
		13C-188-HpCB		106	(25%-150%)
		13C-189-HpCB		76.3	(25%-150%)
		13C-202-OcCB		106	(25%-150%)
13C-205-OcCB		91.8	(25%-150%)		
13C-206-NoCB		101	(25%-150%)		
13C-208-NoCB		103	(25%-150%)		
13C-209-DeCB		109	(25%-150%)		
13C-111-PeCB		85.4	(30%-135%)		
13C-28-TrCB		74.9	(30%-135%)		
13C-178-HpCB		103	(30%-135%)		
11537006	VC-IRB-13-ALT-S2	13C-1-MoCB		29.3	(15%-150%)
		13C-3-MoCB		31.7	(15%-150%)
		13C-4-DiCB		34.6	(25%-150%)
		13C-15-DiCB		41.4	(25%-150%)
		13C-19-TrCB		40.6	(25%-150%)
		13C-37-TrCB		36.4	(25%-150%)
		13C-54-TeCB		41.1	(25%-150%)
		13C-77-TeCB		40.9	(25%-150%)
		13C-81-TeCB		42.0	(25%-150%)
		13C-104-PeCB		47.3	(25%-150%)
		13C-105-PeCB		39.1	(25%-150%)
		13C-114-PeCB		39.8	(25%-150%)
		13C-118-PeCB		40.1	(25%-150%)
		13C-123-PeCB		41.4	(25%-150%)
		13C-126-PeCB		36.2	(25%-150%)
		13C-155-HxCB		43.7	(25%-150%)
13C-156-HxCB	C	37.1	(25%-150%)		

**PCB Congeners**  
**Surrogate Recovery Report**

SDG Number: L1736603

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
11537006	VC-IRB-13-ALT-S2	13C-157-HxCB	C156L		
		13C-167-HxCB		38.6	(25%-150%)
		13C-169-HxCB		33.5	(25%-150%)
		13C-188-HpCB		54.1	(25%-150%)
		13C-189-HpCB		38.5	(25%-150%)
		13C-202-OcCB		53.3	(25%-150%)
		13C-205-OcCB		45.9	(25%-150%)
		13C-206-NoCB		54.5	(25%-150%)
		13C-208-NoCB		51.4	(25%-150%)
		13C-209-DeCB		54.8	(25%-150%)
		13C-111-PeCB		55.4	(30%-135%)
		13C-28-TrCB		49.4	(30%-135%)
		13C-178-HpCB		67.6	(30%-135%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

Page 1 of 2

SDG Number: L1736603

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 36078

Matrix: SOIL

Lab Sample ID: 12019921

Instrument: HRP791

Analysis Date: 11/09/2017 13:09

Dilution: 1

Analyst: MLS

Prep Batch ID: 36078

Batch ID: 36080

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
2051-60-7	LCS 1-MoCB	50.0	66.1	132	50-150
2051-62-9	LCS 3-MoCB	50.0	60.5	121	50-150
13029-08-8	LCS 4-DiCB	50.0	63.4	127	50-150
2050-68-2	LCS 15-DiCB	50.0	60.8	122	50-150
38444-73-4	LCS 19-TrCB	50.0	56.7	113	50-150
38444-90-5	LCS 37-TrCB	50.0	49.9	99.7	50-150
15968-05-5	LCS 54-TeCB	100	102	102	50-150
32598-13-3	LCS 77-TeCB	100	97.1	97.1	50-150
70362-50-4	LCS 81-TeCB	100	105	105	50-150
56558-16-8	LCS 104-PeCB	100	101	101	50-150
32598-14-4	LCS 105-PeCB	100	115	115	50-150
74472-37-0	LCS 114-PeCB	100	112	112	50-150
31508-00-6	LCS 118-PeCB	100	108	108	50-150
65510-44-3	LCS 123-PeCB	100	102	102	50-150
57465-28-8	LCS 126-PeCB	100	117	117	50-150
33979-03-2	LCS 155-HxCB	100	102	102	50-150
38380-08-4	LCS 156-HxCB	200	C 234	117	50-150
69782-90-7	LCS 157-HxCB		C156		
52663-72-6	LCS 167-HxCB	100	120	120	50-150
32774-16-6	LCS 169-HxCB	100	113	113	50-150
74487-85-7	LCS 188-HpCB	100	99.6	99.6	50-150
39635-31-9	LCS 189-HpCB	100	112	112	50-150
2136-99-4	LCS 202-OcCB	150	154	103	50-150
74472-53-0	LCS 205-OcCB	150	150	100	50-150
40186-72-9	LCS 206-NoCB	150	147	97.8	50-150
52663-77-1	LCS 208-NoCB	150	161	107	50-150
2051-24-3	LCS 209-DeCB	150	154	103	50-150

**PCB Congeners**  
**Quality Control Summary**  
**Spike Recovery Report**

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**SDG Number:** L1736603  
**Client ID:** LCSD for batch 36078  
**Lab Sample ID:** 12019922  
**Instrument:** HRP791  
**Analyst:** MLS

**Sample Type:** Laboratory Control Sample Duplicate  
**Matrix:** SOIL  
**Analysis Date:** 11/09/2017 14:16  
**Dilution:** 1  
**Prep Batch ID:** 36078  
**Batch ID:** 36080

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD 1-MoCB	50.0	33.0	65.9	50-150	66.9 *	0-20
2051-62-9	LCSD 3-MoCB	50.0	42.5	85	50-150	35.0 *	0-20
13029-08-8	LCSD 4-DiCB	50.0	40.0	80	50-150	45.2 *	0-20
2050-68-2	LCSD 15-DiCB	50.0	57.3	115	50-150	5.97	0-20
38444-73-4	LCSD 19-TrCB	50.0	47.0	94.1	50-150	18.6	0-20
38444-90-5	LCSD 37-TrCB	50.0	47.9	95.8	50-150	3.97	0-20
15968-05-5	LCSD 54-TeCB	100	93.7	93.7	50-150	8.77	0-20
32598-13-3	LCSD 77-TeCB	100	96.1	96.1	50-150	0.992	0-20
70362-50-4	LCSD 81-TeCB	100	105	105	50-150	0.171	0-20
56558-16-8	LCSD 104-PeCB	100	97.0	97	50-150	4.40	0-20
32598-14-4	LCSD 105-PeCB	100	115	115	50-150	0.265	0-20
74472-37-0	LCSD 114-PeCB	100	110	110	50-150	1.74	0-20
31508-00-6	LCSD 118-PeCB	100	107	107	50-150	1.18	0-20
65510-44-3	LCSD 123-PeCB	100	99.3	99.3	50-150	2.62	0-20
57465-28-8	LCSD 126-PeCB	100	114	114	50-150	1.94	0-20
33979-03-2	LCSD 155-HxCB	100	96.8	96.8	50-150	5.15	0-20
38380-08-4	LCSD 156-HxCB	200	C 233	116	50-150	0.478	0-20
69782-90-7	LCSD 157-HxCB		C156				
52663-72-6	LCSD 167-HxCB	100	118	118	50-150	1.48	0-20
32774-16-6	LCSD 169-HxCB	100	114	114	50-150	0.452	0-20
74487-85-7	LCSD 188-HpCB	100	99.2	99.2	50-150	0.475	0-20
39635-31-9	LCSD 189-HpCB	100	113	113	50-150	0.173	0-20
2136-99-4	LCSD 202-OcCB	150	154	103	50-150	0.0596	0-20
74472-53-0	LCSD 205-OcCB	150	151	101	50-150	0.665	0-20
40186-72-9	LCSD 206-NoCB	150	147	97.7	50-150	0.0532	0-20
52663-77-1	LCSD 208-NoCB	150	161	107	50-150	0.0983	0-20
2051-24-3	LCSD 209-DeCB	150	156	104	50-150	1.13	0-20



## Method Blank Summary

Page 1 of 1

SDG Number: L1736603  
Client ID: MB for batch 36078  
Lab Sample ID: 12019920  
Column:

Client: ALPH001  
Instrument ID: HRP791  
Prep Date: 02-NOV-17

Matrix: SOIL  
Data File: c09nov17a-4  
Analyzed: 11/09/17 15:22

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 36078	12019921	c09nov17a-2	11/09/17	1309
02 LCSD for batch 36078	12019922	c09nov17a-3	11/09/17	1416
03 VC-IRB-11-ALT-S1	11537001	c10nov17a-4	11/10/17	1243
04 VC-IRB-11-ALT-S2	11537002	c10nov17a-5	11/10/17	1350
05 VC-IRB-24-S1	11537003	c10nov17a-6	11/10/17	1456
06 VC-IRB-24-S2	11537004	c10nov17a-7	11/10/17	1603
07 VC-IRB-13-ALT-S1	11537005	c11nov17a-3	11/11/17	0955
08 VC-IRB-13-ALT-S2	11537006	c11nov17a-4	11/11/17	1102

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB	U	2	pg/g	2.00
2051-61-8	2-MoCB	U	2	pg/g	2.00
2051-62-9	3-MoCB	U	2	pg/g	2.00
13029-08-8	4-DiCB		2.44	pg/g	2.00
16605-91-7	5-DiCB	U	2	pg/g	2.00
25569-80-6	6-DiCB	U	2	pg/g	2.00
33284-50-3	7-DiCB	U	2	pg/g	2.00
34883-43-7	8-DiCB	U	2	pg/g	2.00
34883-39-1	9-DiCB	U	2	pg/g	2.00
33146-45-1	10-DiCB	U	2	pg/g	2.00
2050-67-1	11-DiCB	U	20	pg/g	20.0
2974-92-7	12-DiCB	CU	4	pg/g	4.00
2974-90-5	13-DiCB	C12			
34883-41-5	14-DiCB	U	2	pg/g	2.00
2050-68-2	15-DiCB	U	2	pg/g	2.00
38444-78-9	16-TrCB	U	2	pg/g	2.00
37680-66-3	17-TrCB	U	2	pg/g	2.00
37680-65-2	18-TrCB	CU	4	pg/g	4.00
38444-73-4	19-TrCB	U	2	pg/g	2.00
38444-84-7	20-TrCB	CU	4	pg/g	4.00
55702-46-0	21-TrCB	CU	4	pg/g	4.00
38444-85-8	22-TrCB	U	2	pg/g	2.00
55720-44-0	23-TrCB	U	2	pg/g	2.00
55702-45-9	24-TrCB	U	2	pg/g	2.00
55712-37-3	25-TrCB	U	2	pg/g	2.00
38444-81-4	26-TrCB	CU	4	pg/g	4.00
38444-76-7	27-TrCB	U	2	pg/g	2.00
7012-37-5	28-TrCB	C20			
15862-07-4	29-TrCB	C26			
35693-92-6	30-TrCB	C18			
16606-02-3	31-TrCB	U	2	pg/g	2.00
38444-77-8	32-TrCB	U	2	pg/g	2.00

**Comments:**

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 2 of 8

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
38444-86-9	33-TrCB	C21			
37680-68-5	34-TrCB	U	2	pg/g	2.00
37680-69-6	35-TrCB	U	2	pg/g	2.00
38444-87-0	36-TrCB	U	2	pg/g	2.00
38444-90-5	37-TrCB	U	2	pg/g	2.00
53555-66-1	38-TrCB	U	2	pg/g	2.00
38444-88-1	39-TrCB	U	2	pg/g	2.00
38444-93-8	40-TeCB	CU	4	pg/g	4.00
52663-59-9	41-TeCB	U	2	pg/g	2.00
36559-22-5	42-TeCB	U	2	pg/g	2.00
70362-46-8	43-TeCB	U	2	pg/g	2.00
41464-39-5	44-TeCB	CU	6	pg/g	6.00
70362-45-7	45-TeCB	CU	4	pg/g	4.00
41464-47-5	46-TeCB	U	2	pg/g	2.00
2437-79-8	47-TeCB	C44			
70362-47-9	48-TeCB	U	2	pg/g	2.00
41464-40-8	49-TeCB	CU	4	pg/g	4.00
62796-65-0	50-TeCB	CU	4	pg/g	4.00
68194-04-7	51-TeCB	C45			
35693-99-3	52-TeCB	U	2	pg/g	2.00
41464-41-9	53-TeCB	C50			
15968-05-5	54-TeCB	U	2	pg/g	2.00
74338-24-2	55-TeCB	U	2	pg/g	2.00
41464-43-1	56-TeCB	U	2	pg/g	2.00
70424-67-8	57-TeCB	U	2	pg/g	2.00
41464-49-7	58-TeCB	U	2	pg/g	2.00
74472-33-6	59-TeCB	CU	6	pg/g	6.00
33025-41-1	60-TeCB	U	2	pg/g	2.00
33284-53-6	61-TeCB	CU	8	pg/g	8.00
54230-22-7	62-TeCB	C59			
74472-34-7	63-TeCB	U	2	pg/g	2.00
52663-58-8	64-TeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
33284-54-7	65-TeCB	C44			
32598-10-0	66-TeCB	U	2	pg/g	2.00
73575-53-8	67-TeCB	U	2	pg/g	2.00
73575-52-7	68-TeCB	U	2	pg/g	2.00
60233-24-1	69-TeCB	C49			
32598-11-1	70-TeCB	C61			
41464-46-4	71-TeCB	C40			
41464-42-0	72-TeCB	U	2	pg/g	2.00
74338-23-1	73-TeCB	U	2	pg/g	2.00
32690-93-0	74-TeCB	C61			
32598-12-2	75-TeCB	C59			
70362-48-0	76-TeCB	C61			
32598-13-3	77-TeCB	U	2	pg/g	2.00
70362-49-1	78-TeCB	U	2	pg/g	2.00
41464-48-6	79-TeCB	U	2	pg/g	2.00
33284-52-5	80-TeCB	U	2	pg/g	2.00
70362-50-4	81-TeCB	U	2	pg/g	2.00
52663-62-4	82-PeCB	U	2	pg/g	2.00
60145-20-2	83-PeCB	U	2	pg/g	2.00
52663-60-2	84-PeCB	U	2	pg/g	2.00
65510-45-4	85-PeCB	CU	6	pg/g	6.00
55312-69-1	86-PeCB	CU	12	pg/g	12.0
38380-02-8	87-PeCB	C86			
55215-17-3	88-PeCB	CU	4	pg/g	4.00
73575-57-2	89-PeCB	U	2	pg/g	2.00
68194-07-0	90-PeCB	CU	6	pg/g	6.00
68194-05-8	91-PeCB	C88			
52663-61-3	92-PeCB	U	2	pg/g	2.00
73575-56-1	93-PeCB	CU	4	pg/g	4.00
73575-55-0	94-PeCB	U	2	pg/g	2.00
38379-99-6	95-PeCB	U	2	pg/g	2.00
73575-54-9	96-PeCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
41464-51-1	97-PeCB	C86			
60233-25-2	98-PeCB	CU	4	pg/g	4.00
38380-01-7	99-PeCB	U	2	pg/g	2.00
39485-83-1	100-PeCB	C93			
37680-73-2	101-PeCB	C90			
68194-06-9	102-PeCB	C98			
60145-21-3	103-PeCB	U	2	pg/g	2.00
56558-16-8	104-PeCB	U	2	pg/g	2.00
32598-14-4	105-PeCB	U	2	pg/g	2.00
70424-69-0	106-PeCB	U	2	pg/g	2.00
70424-68-9	107-PeCB	U	2	pg/g	2.00
70362-41-3	108-PeCB	CU	4	pg/g	4.00
74472-35-8	109-PeCB	C86			
38380-03-9	110-PeCB	CU	4	pg/g	4.00
39635-32-0	111-PeCB	U	2	pg/g	2.00
74472-36-9	112-PeCB	U	2	pg/g	2.00
68194-10-5	113-PeCB	C90			
74472-37-0	114-PeCB	U	2	pg/g	2.00
74472-38-1	115-PeCB	C110			
18259-05-7	116-PeCB	C85			
68194-11-6	117-PeCB	C85			
31508-00-6	118-PeCB	U	2	pg/g	2.00
56558-17-9	119-PeCB	C86			
68194-12-7	120-PeCB	U	2	pg/g	2.00
56558-18-0	121-PeCB	U	2	pg/g	2.00
76842-07-4	122-PeCB	U	2	pg/g	2.00
65510-44-3	123-PeCB	U	2	pg/g	2.00
70424-70-3	124-PeCB	C108			
74472-39-2	125-PeCB	C86			
57465-28-8	126-PeCB	U	2	pg/g	2.00
39635-33-1	127-PeCB	U	2	pg/g	2.00
38380-07-3	128-HxCB	CU	4	pg/g	4.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

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<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
55215-18-4	129-HxCB	CU	6	pg/g	6.00
52663-66-8	130-HxCB	U	2	pg/g	2.00
61798-70-7	131-HxCB	U	2	pg/g	2.00
38380-05-1	132-HxCB	U	2	pg/g	2.00
35694-04-3	133-HxCB	U	2	pg/g	2.00
52704-70-8	134-HxCB	U	2	pg/g	2.00
52744-13-5	135-HxCB	CU	4	pg/g	4.00
38411-22-2	136-HxCB	U	2	pg/g	2.00
35694-06-5	137-HxCB	U	2	pg/g	2.00
35065-28-2	138-HxCB	C129			
56030-56-9	139-HxCB	CU	4	pg/g	4.00
59291-64-4	140-HxCB	C139			
52712-04-6	141-HxCB	U	2	pg/g	2.00
41411-61-4	142-HxCB	U	2	pg/g	2.00
68194-15-0	143-HxCB	U	2	pg/g	2.00
68194-14-9	144-HxCB	U	2	pg/g	2.00
74472-40-5	145-HxCB	U	2	pg/g	2.00
51908-16-8	146-HxCB	U	2	pg/g	2.00
68194-13-8	147-HxCB	CU	4	pg/g	4.00
74472-41-6	148-HxCB	U	2	pg/g	2.00
38380-04-0	149-HxCB	C147			
68194-08-1	150-HxCB	U	2	pg/g	2.00
52663-63-5	151-HxCB	C135			
68194-09-2	152-HxCB	U	2	pg/g	2.00
35065-27-1	153-HxCB	CU	4	pg/g	4.00
60145-22-4	154-HxCB	U	2	pg/g	2.00
33979-03-2	155-HxCB	U	2	pg/g	2.00
38380-08-4	156-HxCB	CU	4	pg/g	4.00
69782-90-7	157-HxCB	C156			
74472-42-7	158-HxCB	U	2	pg/g	2.00
39635-35-3	159-HxCB	U	2	pg/g	2.00
41411-62-5	160-HxCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

Page 6 of 8

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
74472-43-8	161-HxCB	U	2	pg/g	2.00
39635-34-2	162-HxCB	U	2	pg/g	2.00
74472-44-9	163-HxCB	C129			
74472-45-0	164-HxCB	U	2	pg/g	2.00
74472-46-1	165-HxCB	U	2	pg/g	2.00
41411-63-6	166-HxCB	C128			
52663-72-6	167-HxCB	U	2	pg/g	2.00
59291-65-5	168-HxCB	C153			
32774-16-6	169-HxCB	U	2	pg/g	2.00
35065-30-6	170-HpCB	U	2	pg/g	2.00
52663-71-5	171-HpCB	CU	4	pg/g	4.00
52663-74-8	172-HpCB	U	2	pg/g	2.00
68194-16-1	173-HpCB	C171			
38411-25-5	174-HpCB	U	2	pg/g	2.00
40186-70-7	175-HpCB	U	2	pg/g	2.00
52663-65-7	176-HpCB	U	2	pg/g	2.00
52663-70-4	177-HpCB	U	2	pg/g	2.00
52663-67-9	178-HpCB	U	2	pg/g	2.00
52663-64-6	179-HpCB	U	2	pg/g	2.00
35065-29-3	180-HpCB	CU	4	pg/g	4.00
74472-47-2	181-HpCB	U	2	pg/g	2.00
60145-23-5	182-HpCB	U	2	pg/g	2.00
52663-69-1	183-HpCB	CU	4	pg/g	4.00
74472-48-3	184-HpCB	U	2	pg/g	2.00
52712-05-7	185-HpCB	C183			
74472-49-4	186-HpCB	U	2	pg/g	2.00
52663-68-0	187-HpCB	U	2	pg/g	2.00
74487-85-7	188-HpCB	U	2	pg/g	2.00
39635-31-9	189-HpCB	U	2	pg/g	2.00
41411-64-7	190-HpCB	U	2	pg/g	2.00
74472-50-7	191-HpCB	U	2	pg/g	2.00
74472-51-8	192-HpCB	U	2	pg/g	2.00

**Comments:**

**C** Congener has coeluters. When Cxxx, refer to congener number xxx for data  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
69782-91-8	193-HpCB	C180			
35694-08-7	194-OcCB	U	2	pg/g	2.00
52663-78-2	195-OcCB	U	2	pg/g	2.00
42740-50-1	196-OcCB	U	2	pg/g	2.00
33091-17-7	197-OcCB	CU	4	pg/g	4.00
68194-17-2	198-OcCB	CU	4	pg/g	4.00
52663-75-9	199-OcCB	C198			
52663-73-7	200-OcCB	C197			
40186-71-8	201-OcCB	U	2	pg/g	2.00
2136-99-4	202-OcCB	U	2	pg/g	2.00
52663-76-0	203-OcCB	U	2	pg/g	2.00
74472-52-9	204-OcCB	U	2	pg/g	2.00
74472-53-0	205-OcCB	U	2	pg/g	2.00
40186-72-9	206-NoCB	U	2	pg/g	2.00
52663-79-3	207-NoCB	U	2	pg/g	2.00
52663-77-1	208-NoCB	U	2	pg/g	2.00
2051-24-3	209-DeCB	U	2	pg/g	2.00
1336-36-3	Total PCB Congeners		2.44	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		20.5	200	pg/g	10.3 *	(15%-150%)
13C-3-MoCB		58.4	200	pg/g	29.2	(15%-150%)
13C-4-DiCB		44.0	200	pg/g	22.0 *	(25%-150%)
13C-15-DiCB		188	200	pg/g	93.9	(25%-150%)
13C-19-TrCB		92.2	200	pg/g	46.1	(25%-150%)
13C-37-TrCB		141	200	pg/g	70.6	(25%-150%)
13C-54-TeCB		74.6	200	pg/g	37.3	(25%-150%)
13C-77-TeCB		198	200	pg/g	98.9	(25%-150%)
13C-81-TeCB		193	200	pg/g	96.3	(25%-150%)
13C-104-PeCB		138	200	pg/g	69.1	(25%-150%)
13C-105-PeCB		155	200	pg/g	77.4	(25%-150%)
13C-114-PeCB		155	200	pg/g	77.6	(25%-150%)
13C-118-PeCB		158	200	pg/g	79.2	(25%-150%)
13C-123-PeCB		162	200	pg/g	81.0	(25%-150%)
13C-126-PeCB		157	200	pg/g	78.6	(25%-150%)
13C-155-HxCB		151	200	pg/g	75.4	(25%-150%)
13C-156-HxCB	C	296	400	pg/g	74.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		154	200	pg/g	76.8	(25%-150%)
13C-169-HxCB		135	200	pg/g	67.7	(25%-150%)
13C-188-HpCB		197	200	pg/g	98.5	(25%-150%)
13C-189-HpCB		150	200	pg/g	75.0	(25%-150%)



**PCB Congeners  
 Certificate of Analysis  
 Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> MB for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 15:22	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
13C-202-OcCB		Qual	Result	Nominal	Units	Acceptable Limits
			189	200	pg/g	94.7 (25%-150%)
13C-205-OcCB			171	200	pg/g	85.5 (25%-150%)
13C-206-NoCB			169	200	pg/g	84.4 (25%-150%)
13C-208-NoCB			154	200	pg/g	76.9 (25%-150%)
13C-209-DeCB			153	200	pg/g	76.4 (25%-150%)
13C-111-PeCB			163	200	pg/g	81.4 (30%-135%)
13C-28-TrCB			109	200	pg/g	54.6 (30%-135%)
13C-178-HpCB			161	200	pg/g	80.3 (30%-135%)

**Comments:**

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019921		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> LCS for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 13:09	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		66.1	pg/g	2.00
2051-62-9	3-MoCB		60.5	pg/g	2.00
13029-08-8	4-DiCB		63.4	pg/g	2.00
2050-68-2	15-DiCB		60.8	pg/g	2.00
38444-73-4	19-TrCB		56.7	pg/g	2.00
38444-90-5	37-TrCB		49.9	pg/g	2.00
15968-05-5	54-TeCB		102	pg/g	2.00
32598-13-3	77-TeCB		97.1	pg/g	2.00
70362-50-4	81-TeCB		105	pg/g	2.00
56558-16-8	104-PeCB		101	pg/g	2.00
32598-14-4	105-PeCB		115	pg/g	2.00
74472-37-0	114-PeCB		112	pg/g	2.00
31508-00-6	118-PeCB		108	pg/g	2.00
65510-44-3	123-PeCB		102	pg/g	2.00
57465-28-8	126-PeCB		117	pg/g	2.00
33979-03-2	155-HxCB		102	pg/g	2.00
38380-08-4	156-HxCB	C	234	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		120	pg/g	2.00
32774-16-6	169-HxCB		113	pg/g	2.00
74487-85-7	188-HpCB		99.6	pg/g	2.00
39635-31-9	189-HpCB		112	pg/g	2.00
2136-99-4	202-OcCB		154	pg/g	2.00
74472-53-0	205-OcCB		150	pg/g	2.00
40186-72-9	206-NoCB		147	pg/g	2.00
52663-77-1	208-NoCB		161	pg/g	2.00
2051-24-3	209-DeCB		154	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		31.1	200	pg/g	15.5	(15%-140%)
13C-3-MoCB		55.0	200	pg/g	27.5	(15%-140%)
13C-4-DiCB		48.7	200	pg/g	24.4 *	(30%-140%)
13C-15-DiCB		183	200	pg/g	91.5	(30%-140%)
13C-19-TrCB		96.0	200	pg/g	48.0	(30%-140%)
13C-37-TrCB		155	200	pg/g	77.3	(30%-140%)
13C-54-TeCB		82.6	200	pg/g	41.3	(30%-140%)
13C-77-TeCB		200	200	pg/g	100	(30%-140%)
13C-81-TeCB		197	200	pg/g	98.5	(30%-140%)
13C-104-PeCB		139	200	pg/g	69.3	(30%-140%)
13C-105-PeCB		156	200	pg/g	77.8	(30%-140%)
13C-114-PeCB		157	200	pg/g	78.5	(30%-140%)
13C-118-PeCB		161	200	pg/g	80.3	(30%-140%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019921		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> LCS for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 13:09	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-123-PeCB			164	200	pg/g	82.2 (30%-140%)
13C-126-PeCB			158	200	pg/g	78.8 (30%-140%)
13C-155-HxCB			153	200	pg/g	76.7 (30%-140%)
13C-156-HxCB		C	297	400	pg/g	74.3 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			153	200	pg/g	76.7 (30%-140%)
13C-169-HxCB			136	200	pg/g	67.8 (30%-140%)
13C-188-HpCB			204	200	pg/g	102 (30%-140%)
13C-189-HpCB			156	200	pg/g	77.9 (30%-140%)
13C-202-OcCB			189	200	pg/g	94.7 (30%-140%)
13C-205-OcCB			175	200	pg/g	87.3 (30%-140%)
13C-206-NoCB			175	200	pg/g	87.3 (30%-140%)
13C-208-NoCB			159	200	pg/g	79.4 (30%-140%)
13C-209-DeCB			167	200	pg/g	83.5 (30%-140%)
13C-111-PeCB			163	200	pg/g	81.6 (40%-125%)
13C-28-TrCB			104	200	pg/g	52.2 (40%-125%)
13C-178-HpCB			172	200	pg/g	86.0 (40%-125%)

**Comments:**

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019922		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> LCSD for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 14:16	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	PQL
2051-60-7	1-MoCB		33.0	pg/g	2.00
2051-62-9	3-MoCB		42.5	pg/g	2.00
13029-08-8	4-DiCB		40.0	pg/g	2.00
2050-68-2	15-DiCB		57.3	pg/g	2.00
38444-73-4	19-TrCB		47.0	pg/g	2.00
38444-90-5	37-TrCB		47.9	pg/g	2.00
15968-05-5	54-TeCB		93.7	pg/g	2.00
32598-13-3	77-TeCB		96.1	pg/g	2.00
70362-50-4	81-TeCB		105	pg/g	2.00
56558-16-8	104-PeCB		97.0	pg/g	2.00
32598-14-4	105-PeCB		115	pg/g	2.00
74472-37-0	114-PeCB		110	pg/g	2.00
31508-00-6	118-PeCB		107	pg/g	2.00
65510-44-3	123-PeCB		99.3	pg/g	2.00
57465-28-8	126-PeCB		114	pg/g	2.00
33979-03-2	155-HxCB		96.8	pg/g	2.00
38380-08-4	156-HxCB	C	233	pg/g	4.00
69782-90-7	157-HxCB	C156			
52663-72-6	167-HxCB		118	pg/g	2.00
32774-16-6	169-HxCB		114	pg/g	2.00
74487-85-7	188-HpCB		99.2	pg/g	2.00
39635-31-9	189-HpCB		113	pg/g	2.00
2136-99-4	202-OcCB		154	pg/g	2.00
74472-53-0	205-OcCB		151	pg/g	2.00
40186-72-9	206-NoCB		147	pg/g	2.00
52663-77-1	208-NoCB		161	pg/g	2.00
2051-24-3	209-DeCB		156	pg/g	2.00

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		29.3	200	pg/g	14.6 *	(15%-140%)
13C-3-MoCB		57.4	200	pg/g	28.7	(15%-140%)
13C-4-DiCB		54.0	200	pg/g	27.0 *	(30%-140%)
13C-15-DiCB		185	200	pg/g	92.7	(30%-140%)
13C-19-TrCB		96.4	200	pg/g	48.2	(30%-140%)
13C-37-TrCB		156	200	pg/g	78.0	(30%-140%)
13C-54-TeCB		84.6	200	pg/g	42.3	(30%-140%)
13C-77-TeCB		211	200	pg/g	105	(30%-140%)
13C-81-TeCB		209	200	pg/g	105	(30%-140%)
13C-104-PeCB		140	200	pg/g	69.9	(30%-140%)
13C-105-PeCB		156	200	pg/g	77.8	(30%-140%)
13C-114-PeCB		157	200	pg/g	78.6	(30%-140%)
13C-118-PeCB		162	200	pg/g	81.0	(30%-140%)

**PCB Congeners  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> L1736603	<b>Client:</b> ALPH001	<b>Project:</b> ALPH00217
<b>Lab Sample ID:</b> 12019922		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 36078		
<b>Client ID:</b> LCSD for batch 36078		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 36080	<b>Method:</b> EPA Method 1668A	
<b>Run Date:</b> 11/09/2017 14:16	<b>Analyst:</b> MLS	<b>Instrument:</b> HRP791
<b>Data File:</b> c09nov17a-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 36078	<b>Prep Method:</b> SW846 3540C	<b>Prep SOP Ref:</b> CF-OA-E-001
<b>Prep Date:</b> 02-NOV-17	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	Recovery%	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Acceptable Limits</b>
13C-123-PeCB			164	200	pg/g	82.1 (30%-140%)
13C-126-PeCB			158	200	pg/g	79.1 (30%-140%)
13C-155-HxCB			158	200	pg/g	78.8 (30%-140%)
13C-156-HxCB		C	298	400	pg/g	74.6 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			155	200	pg/g	77.3 (30%-140%)
13C-169-HxCB			139	200	pg/g	69.4 (30%-140%)
13C-188-HpCB			204	200	pg/g	102 (30%-140%)
13C-189-HpCB			153	200	pg/g	76.6 (30%-140%)
13C-202-OcCB			192	200	pg/g	96.0 (30%-140%)
13C-205-OcCB			175	200	pg/g	87.4 (30%-140%)
13C-206-NoCB			174	200	pg/g	86.8 (30%-140%)
13C-208-NoCB			159	200	pg/g	79.3 (30%-140%)
13C-209-DeCB			162	200	pg/g	81.1 (30%-140%)
13C-111-PeCB			163	200	pg/g	81.5 (40%-125%)
13C-28-TrCB			108	200	pg/g	54.1 (40%-125%)
13C-178-HpCB			169	200	pg/g	84.6 (40%-125%)

**Comments:**  
C Congener has coeluters. When Cxxx, refer to congener number xxx for data